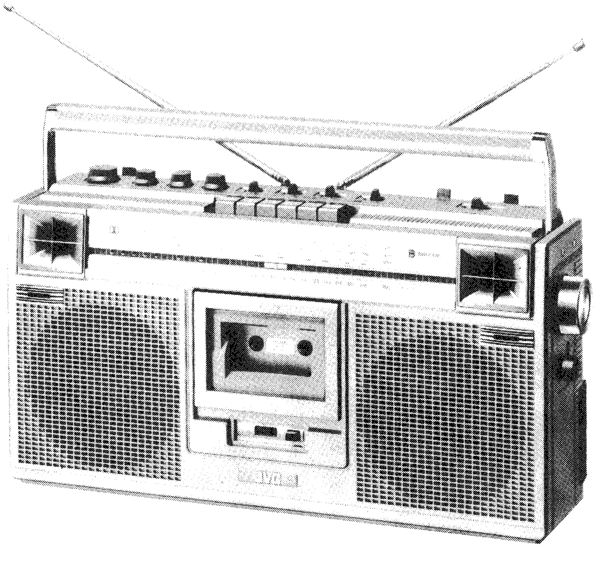
JVC

SERVICE MANUAL

MODEL

RC-656L/LB

LW-MW-SW-FM
4-BAND STEREO
RADIO CASSETTE
RECORDER



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Contents

Page
Specifications 2
Features 3
Names of Parts 3
Removal of Main Parts 4
Removal of Cassette Mecha Parts 5
Adjustment of Cassette Recorder 6
How to Engage Dial Cord 7
Adjustment of Cassette Recorder Amplifier 8
Tuner Alignment. 9
Block Diagrams. 12
Schematic Diagram (Tuner Circuit). 13
Schematic Diagram (Amplifier Circuit) 14
Wiring Connection. 15

Page
Mechanical Component Parts. 16
  Mechanical Component Parts List. 17
Assembly Parts 18
  Assembly Parts List 18
Amplifier P.W. Board Parts .21
  Amplifier P.W. Board Parts List 22
Tuner P.W. Board Parts (Power Supply, Motor). 25
  Tuner P.W. Board Parts List. 26
  Power Supply P.W. Board Parts List 28
Packing 29
  Packing Material Parts List 29
Accessories. 29

Specifications

Semiconductors	: 9 ICs (including 2 for the microphone and 1 for the motor) 33 transistors & 1 FET
Speakers	: 16 cm (3. 2 Ω) x 2, 5 cm (4 Ω) x 2
Tuner section	
Frequency ranges	: FM 88 – 108 MHz SW 6 – 18 MHz MW 540 – 1600 kHz LW 150 – 350 kHz
Antennas	: Telescopic antenna for SW & FM Ferrite core antenna for MW & LW
Tape recorder section	
Track system	: 4-Track 2-channel stereo
Frequency response	: 30 – 15,000 Hz (with chrome tape) 30 – 14,000 Hz (with normal tape)
Wow & flutter	: 0.12% (WRMS)
S/N ratio	: 50 dB, The S/N ratio is improved by 5 dB at 1 kHz and 10 dB at 5 kHz or above with DOLBY N.R. switch ON.
Rewind time	: Within 110 sec. (C-60 cassette)
Fast forward time	: Within 110 sec. (C-60 cassette)
Amplifier section	
Power output	: Max. 12 W (6 W + 6 W) at 3.2 Ω
Input jacks	: Mic x 2 (0.8 mV, low impedance)
Output jacks	: Ext. speaker x 2 (load impedance 4 – 8 Ω) Headphones x 1
Input/output jack	: DIN jack
Power supply	: DC 12 V (8 "R20 (U2)" batteries) Car battery (DC 12 V) AC 240/220/110 V, 50/60 Hz
Power consumption	: 19 W
Dimensions	: 468(W) x 247(H) x 125 (D) mm
Weight	: 5.2 kg (without batteries) 5.9 kg (with batteries)

Design and specifications subject to change without notice.

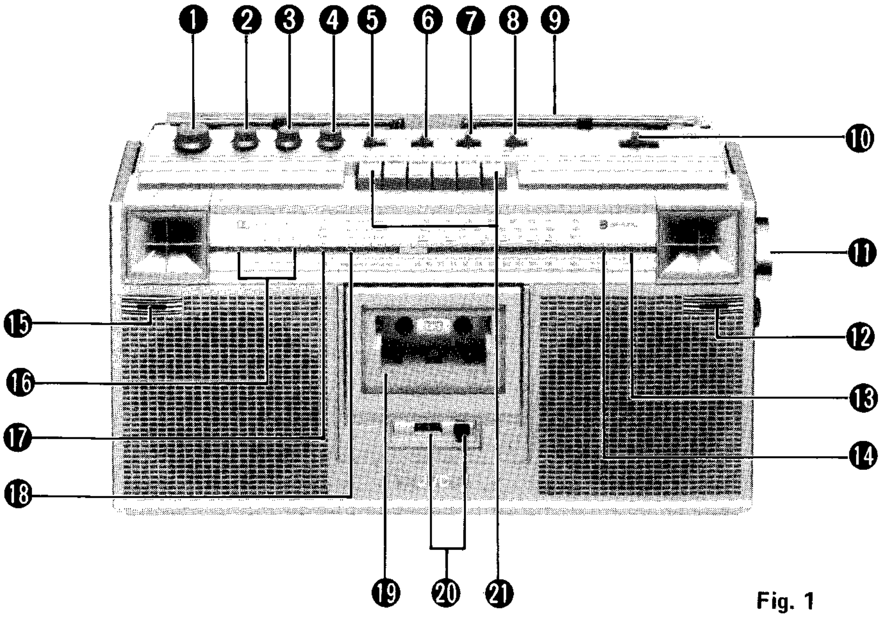
Features

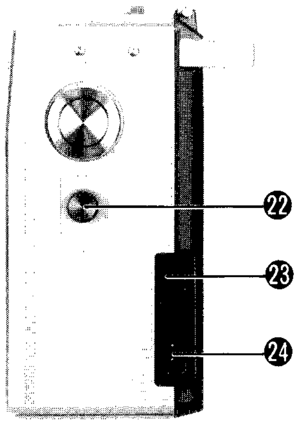
- Dolby * NR circuit incorporated for noise-free recording and playback.
- Biphonic * Processor for reproducing three-dimensional Biphonic sound field from binaural recordings and for giving wide stereo effect to ordinary stereo recordings.
- Five-LED Multi Peak Indicator for allowing accurate recording level control in order to make more elaborate "professional-touch" recordings.
- Manual/Automatic switchable recording level control system.
- 2-Way/4-speaker system consisting of two 16-cm (6-1-2") woofers and two 5-cm (2") tweeters.
- High-performance tuner realized by incorporation of a quadrature detector and a PLL IC multiplexer circuit.
- One-button recording ease — press only the record button to start recording.
- Auto-stop at the tape end in the record and play modes.
- Pause button to stop the tape temporarily in the record or play mode.
- Fine tuning for clearer short-wave reception.
- External speaker terminals provided.
- DIN jack provided.
- Three-way power supply flexibility; AC, 8 "R20" batteries or car battery.

* Noise Reduction system made under licence from Dolby Laboratories. "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories.

* BIPHONIC is a trademark of JVC.

Names of Parts





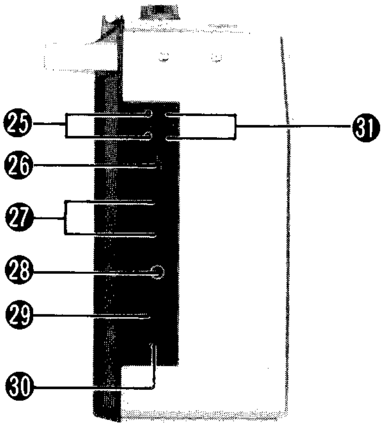


Fig. 1

① VOLUME
② BASS
③ TREBLE
④ REC VOLUME control
⑤ REC/DOLBY NR switch
⑥ TAPE switch
⑦ MODE switch
⑧ FUNCTION switch
⑨ Telescopic antenna
⑩ BAND switch
⑪ Tuning knob
⑫ Built-in microphone
⑬ TUNING indicator
⑭ FM STEREO indicator
⑮ Built-in microphone
⑯ Five-LED Multi peak indicator (LEVEL)
⑰ BATTERY indicator
⑱ DOLBY NR indicator
⑲ Cassette door
⑳ Tape counter with reset button
㉑ Tape operation buttons
PAUSE button (▮▮)
RECORD button (○)
PLAY button (◂)
CUE button (◂◂)
REVIEW button (▸▸)
STOP/EJECT button (■)
㉒ FINE TUNING knob
㉓ Voltage selector
㉔ AC jack
㉕ Microphone jacks (MIC)
㉖ DIN jack (REC/PB)
㉗ External speaker jacks (EXT SPKR 4 ~ 8Ω)
㉘ HEADPHONE jack
㉙ BEAT CUT switch
㉚ External DC input jack (DC12V)
㉛ Dummy holes for connecting microphones with remote control plugs.

Removal of Main Parts

1. Rear Cabinet

(1) Remove 7 screws (① ~ ⑧)
①, ② = SDSP3012
③~⑧ = VKZ4008-001

(2) Remove 2 connectors (3 pin) connected to the rod antennas and power supply wires.

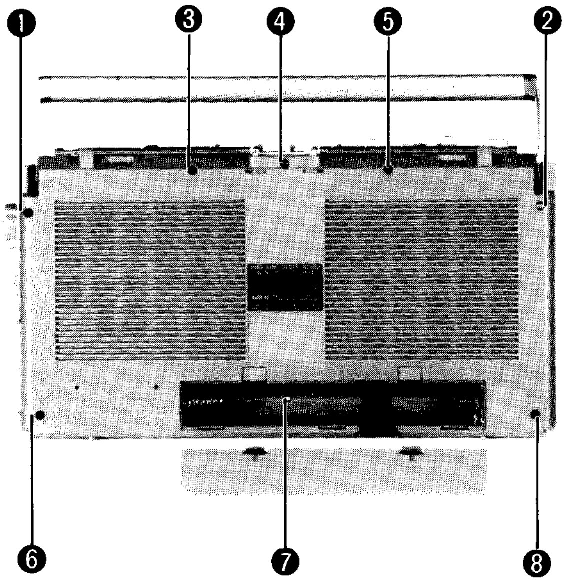


Fig. 2

2. Amplifier P.W. Board Ass'y

(1) Remove the rear cabinet.

(2) Remove 4 control knobs (VOLUME, BASS, TREBLE and REC VOLUME).

(3) Remove 6 screws (⑨ ~ ⑭)
⑪ = SDSP3034V
⑨ ⑩ ⑫ ⑬ ⑭ = SDSP3005V

(4) Remove the 3 pin connector connected to the E MIC wire terminal P.W.B.

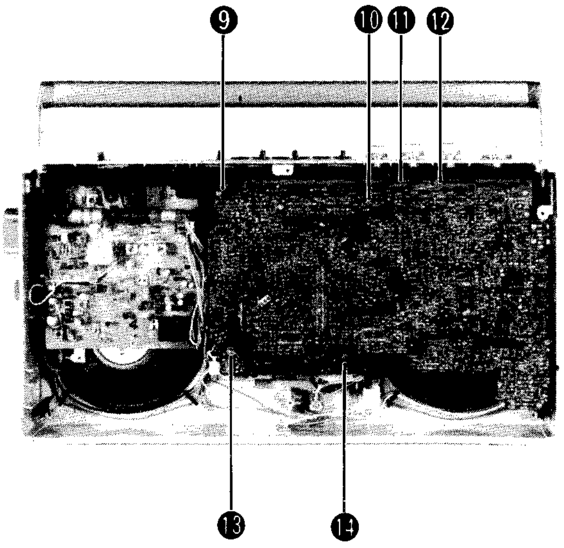


Fig. 3

3. Tuner P.W. Board Ass'y

(1) Remove the rear cabinet.

(2) Remove Tuning knob and Fine tuning knob.

(3) Remove 5 screws (SBSF3010V)

(4) Remove 2 connectors (3 pin and 5 pin).

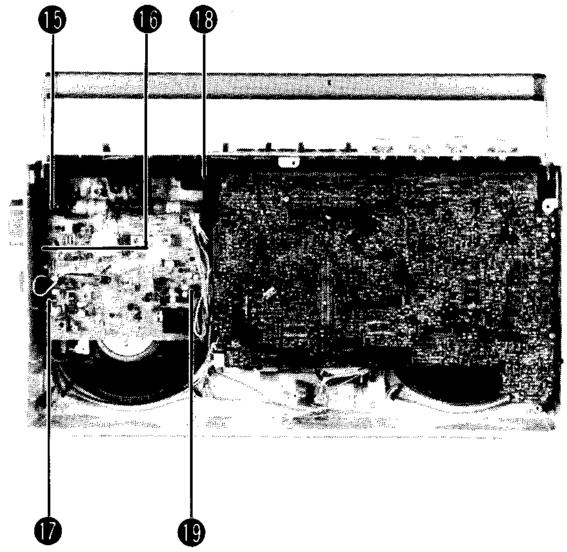


Fig. 4

4. Cassette Mechanism

Remove 4 screws (⑳ ~ ㉓) fastening the cassette mechanism.

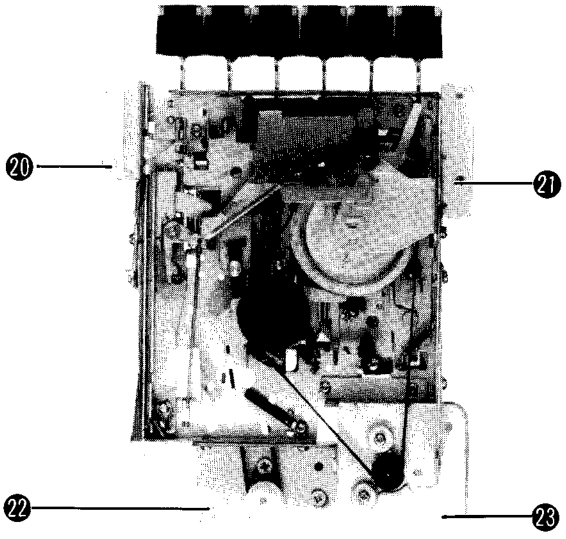


Fig. 5

Removal of Cassette Mecha Parts

1. **Pinch roller (❶)**
   - Remove the spring (❷).
   - Remove the E-ring (❸).
2. **REC/PB head (❹)**
   - Remove 2 screws (❺ , ❻).
   - Remove the solenoid head circuit board.
3. **Erase head (❼)**
   - Remove 2 screws (❽).
4. **Reel assembly (❾ , ❿)**
   - Insert the special tool for reel removing to reel 3 groove, and then pull out the reel.
5. **Take-up roller (⓫)**
   - Push the FF button.
   - Remove the washer.
     If you broke the washer, you can use E-ring (REE 1200).
6. **RF clutch assembly (⓬)**
   - Remove the main belt (⓭).
   - Pull out the pulley (it is pressed).
7. **Main belt (⓭)**
   - To flywheel bracket (⓮) remove a screw (⓯).
8. **Flywheel assembly (⓰)**
   Do the same manner as for the main belt.
   (When assembling it, be careful not to forget the nylon washer for capstan.)
9. **Reef switch (⓱)**
   - Remvoe the screw (⓲).
10. **Motor assembly (⓳)**
    - Remove 3 screws (⓴).

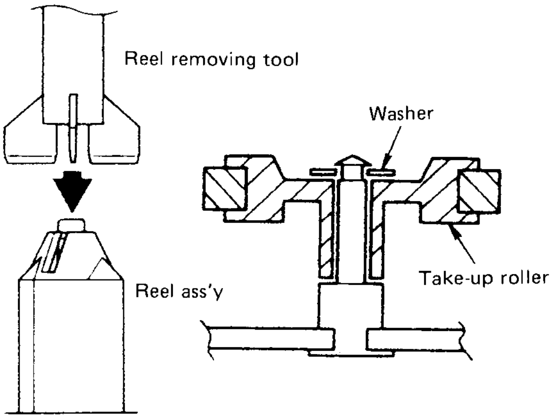


Fig. 6

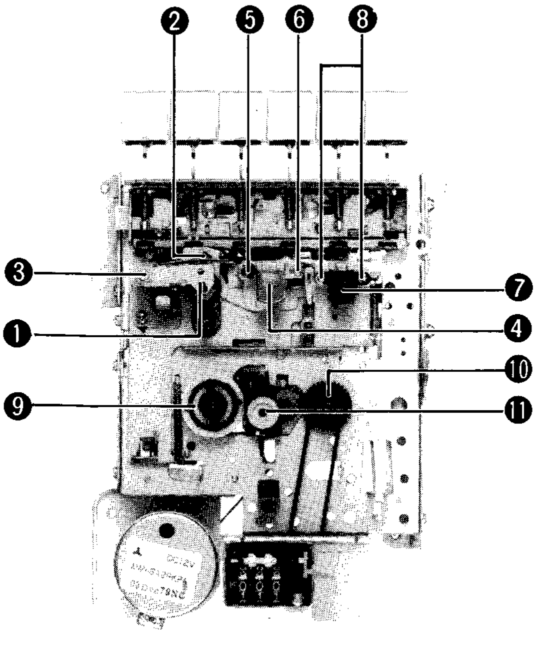


Fig. 7

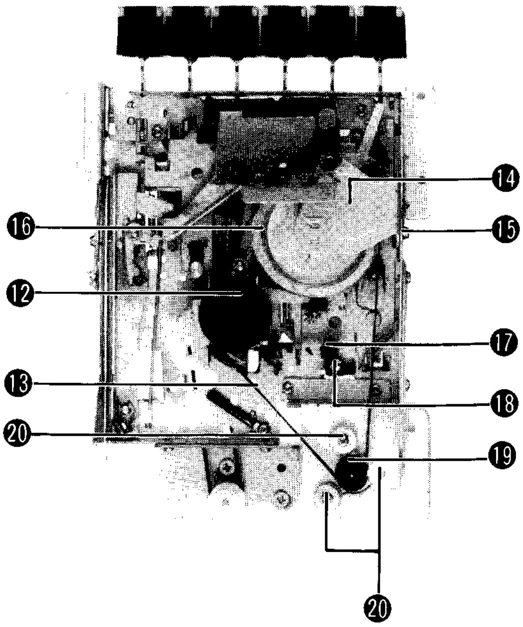


Fig. 8

Adjustment of Cassette Recorder

If the following adjustments are performed by ear or eye in a simple manner, be sure to perform then again later.

- **Head replacement and angle adjustment**

1. Head replacement
   1) To replace the record/playback head, remove two screws Ⓐ and Ⓑ shown in Fig. 9.
   2) To replace the erase head, remove two screws Ⓒ and Ⓓ shown in Fig. 9.
   3) When pressing the playback button, adjust these heads with the screws and the adjustment hole so that they are located as shown in Fig. 9.

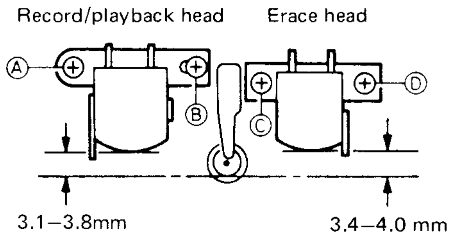


Fig. 9

2. Angle adjustment of Record/Playback head
   1) Connect an oscilloscope to the speaker terminal. (A Lissajous waveform will appear.)
   2) Play back the head angle adjusting tape (JVC test tape VTT-657).
   3) Adjust the head angle by turning screw Ⓑ shown in Fig. 9 so that the phase difference between the L and R outputs is 0° and the outputs are maximum.
   4) After adjustment, be sure to paint-lock screw Ⓑ .
   5) When adjusting the head angle using neither a voltmeter nor test tape, adjust it so that the output (esp. high band) from the speaker is maximum.

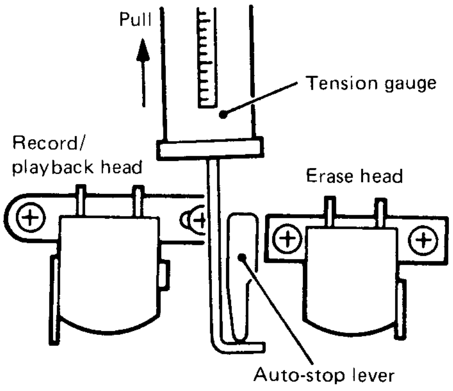


Fig. 10

- **Check of auto-stop detection pressure**
  1) Place the head mechanism with its motor side down, then set the recorder into the playback mode.
  2) Hang a tension gauge on the detection cap tip as shown in Fig. 10, then confirm that when this gauge is slowly pulled, the auto-stop lever operates in the range of 50–70 g.

- **Flywheel thrust adjustment**

Insert a clearance gauge into the clearance between the flywheel and the flywheel bracket, then adjust the thrust by turning the thrust screw shown in Fig. 11 to obtain a clearance of 0.1–0.3 mm wide.

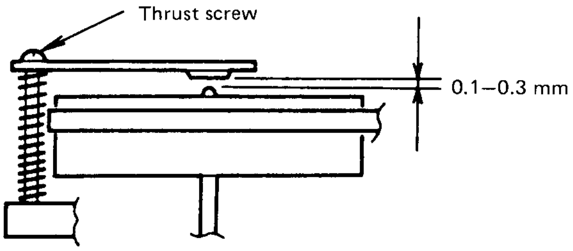


Fig. 11

- **Pause operation check**

Operation and timing check
1) Confirm that when pressing the PAUSE button in the playback mode, the tape stops running, while when re-pressing, the recorder returns to the playback mode without any abnormality.
2) Confirm that when slowly pressing the PAUSE button, the pinch roller separates from the capstan to stop rotating earlier than the reel disk which in turn stops rotating. (Although they may stop almost at the same time, this means no abnormality.)

Note: For positive checking, it is advisable to use a cassette tape with a small number of turns such as C-30, etc.

- **Adjustment of pinch roller contact force**
  1) Position the mechanism shown in Fig. 12 with the motor side down, enter the recorder into the playback mode, and hang a tension gauge on the protrusion part of the pinch roller arm shown in Fig. 12. Next, confirm that when slowly pulling the tension gauge, the pinch roller stops rotating in the range of 450–550 g.
  2) If the pinch roller does not stop in the range, replace the contact spring or adjust the contact force by bending this spring.

Note: Overly strong contact force may cause noise in the pinch roller bearing part, wow & flutter, or similar adverse effects. Conversely, too little contact force may cause auto-stop function failure, wow & flutter, or similar adverse effects.

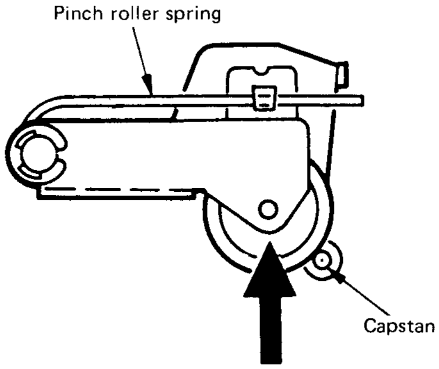


Fig. 12

- **Playback torque adjustment**
  1) Set a torque gauge to the take-up reel, then enter the recorder into the playback mode, and confirm that the playback torque is 45–70 g/cm.

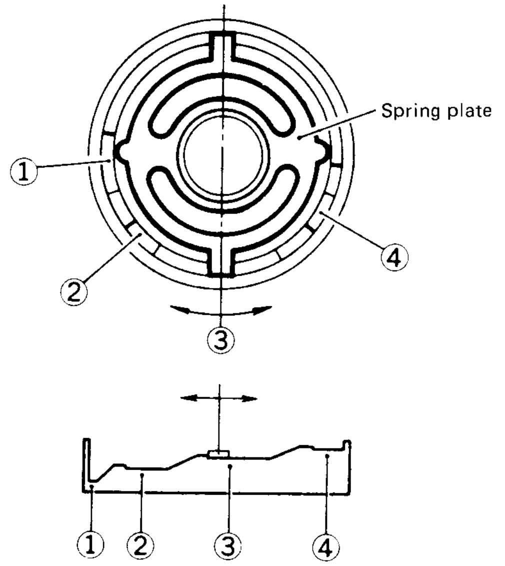


Fig. 13

  2) When the playback torque is not in this range, check whether or not rubber and/or rotary members have dirt and/or oil on them. After that, if the torque is still low, lift up the spring plate shown in Fig. 13 to move it to position ③ , while if the torque is high, move it to position ① in the same manner.

- **Fast forward/rewind torque adjustment**

1. Fast forward torque adjustment (Fig. 14)
   Set a torque gauge to the take-up reel, then enter the recorder into the playback mode, and confirm that the fast forward torque is 60–130 g/cm.
   1) When a normal torque is not obtained because of the instability of the sliding mechanism within the R.F. clutch ass'y, lift up the spring plate inside the R.F. clutch ass'y and adjust the torque by moving it in the direction of ① .
   2) When a normal torque is not obtained should the said sliding mechanism operate normally, adjust the torque by moving the said spring plate in the direction of ④ in the same manner as item 1).

2. Rewind torque adjustment (Fig. 14)
   Set a torque gauge to the rewind reel, then enter the recorder into the rewind mode, and confirm that the rewind torque is 60–130 g/cm.
   1) When a normal torque is not obtained because of the instability of the sliding mechanism within the R.F. clutch ass'y, lift up the spring plate inside the R.F. clutch ass'y and adjust the torque by moving it in the direction of ① .
   2) When a normal torque is not obtained should the said sliding mechanism operate normally, adjust the torque by moving the said spring plate in the direction of ④ in the same manner as item 1) of this paragraph.
   Note: When rubber members (belt, idler), the fringe of the flywheel, etc. have dirt on them, a normal torque may not appear, so clean them with alcohol, etc.

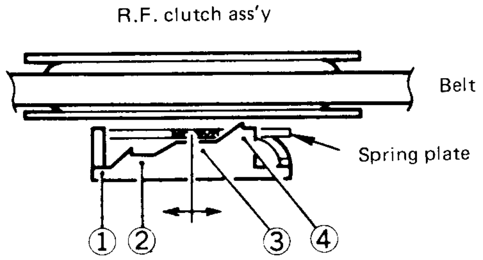


Fig. 14

How to Engage Dial Cord

1. Turn the dial drum fully counterclockwise (to the lowest frequency).
2. Use tetron cord (995mm long and 0.5mm in diameter)
3. Install the string in the sequence of the numbers.

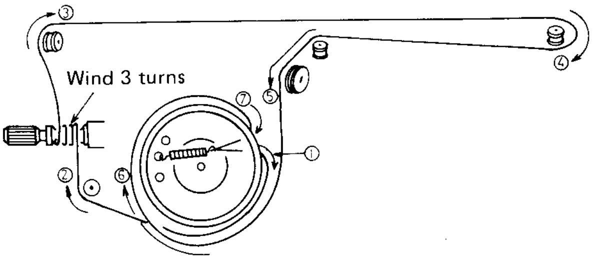
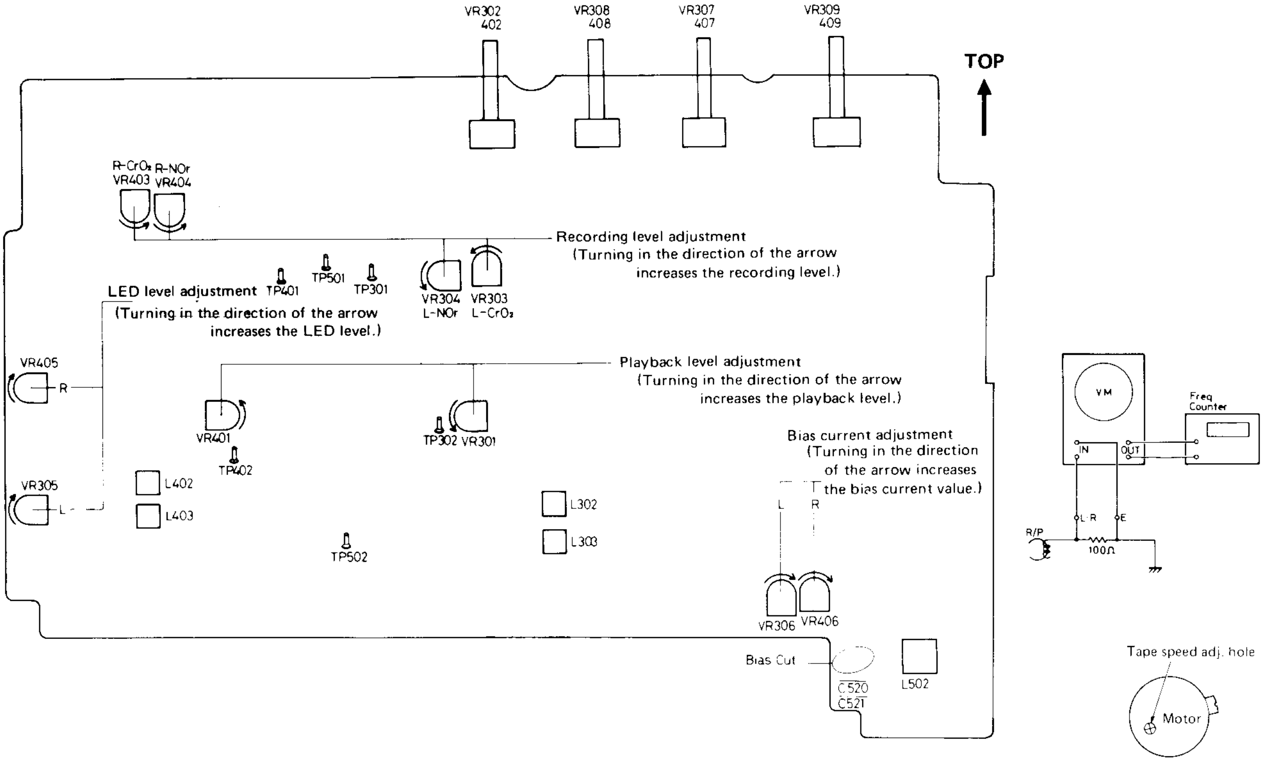


Fig. 15

Adjustment of Cassette Recorder Amplifier

Adjustment location



Recording level adjustment (Turning in the direction of the arrow increases the recording level.)

LED level adjustment (Turning in the direction of the arrow increases the LED level.)

Playback level adjustment (Turning in the direction of the arrow increases the playback level.)

Bias current adjustment (Turning in the direction of the arrow increases the bias current value.)

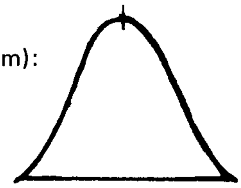
Fig. 16

Step	Item	Input	Output	Adjusting point	Standard value	Tape select switch	Dolby NR switch	Rec-Play	Beat cut switch	Remarks
1	Head azimuth	Test tape VTT-653,658 (10kHz)	T302, T402 T502	Head	The phase difference between the L and R outputs is 0° and maximize the output level at the same time.	Normal	OFF	Play	–	Before playback level adjustment, L and R channel output levels become unbalance.
2	Playback level	Test tape VTT-664	same as above	VR301,401	410mV	Normal	OFF (ON)	Play	–	Check the playback level so that difference between ON and OFF with Dolby NR switch is less than ±1dB
3	LED indicators	Apply 1kHz -4dBs signal to the DIN socket. (L or R channel is aoplied independent signal.) Adjust VR305 so that TP302 output level become 410mV with R channel.		VR305,405	Check to light LED at 0dB level and to un-light the LED at -1dB level down.	Normal	ON (OFF)	Rec	–	Check Test Point 302, 402 levels become less than ±1dB at Dolby SW on.
4	Recording current normal	same as above	TP301, TP401 T501	VR304,404	35µA (0.35mV/10Ω)	Normal	OFF	Rec	–	Unsolder the bias cutting pattern.
	CrO2			VR303,403	70µA (0.7mV/10Ω)	CrO2				
5	Bias frequency	–	same as above	L502	63.5±0.1kHz	Normal	OFF	Rec	"1"	If the frequency is low, cut C409 and C408 Turn VR304,406 center.
6	Bias current	–	same as above	VR306,406	320µF ($\frac{3.2mV}{10\Omega}$)	Normal	OFF	Rec	"1"	For this adjustment, Bias frequency not become standard value
7	Stereo signal trap	Apply 19kHz, 0dB signal to the DIN socket VR302=Max.	TP302, TP402 TP502	L303,403	min.	Normal	ON	Rec	–	After this adjustment, check the level so that 1kHz ~ 19kHz frequency become 30dB or more.
8	Bias trap	Apply 1kHz - less than-100 dBs signal to the DIN socket VR302=Max.	same as above	L302,402	Less than 0.5dB with the beat cut switch selection	CrO2	ON	Rec	"1~3"	
9	Rec/Play frequency response (Normal)	Apply -40dBs signal to the DIN socket	same as above	VR306,406	(At reference frequency; 1kHz 10kHz; 0±1dB)	Normal	OFF (ON)	Rec (Play)	"1" (Normal)	Check the Rec/PB frequency responce become standard value at Dolby NR circuit ON.
10	Rec/Play level (Normal)	Apply -4dBs signal to the DIN socket. Adjust VR302 so that TP202 output level become 410mV.	same as above	VR304,404	The output difference level become less than ±1dB.	Normal	OFF	Rec (Play)	"1" (Normal)	
11	Rec/play level (CrO2)	same as above	same as above	VR303,403	same as above	CrO2	OFF	Rec (Play)	"1" (Normal)	

Tuner Alignment

BASIC CONDITIONS

POWER SOURCE OF THE RECEIVER	DC 12 V, AC240/220/110 V, 50/60 Hz.
LOAD RESISTANCE OF THE RECEIVER	50 mW (0.4 V)/3.2 Ω.
MODULATION OF SSG	400 Hz. 30%

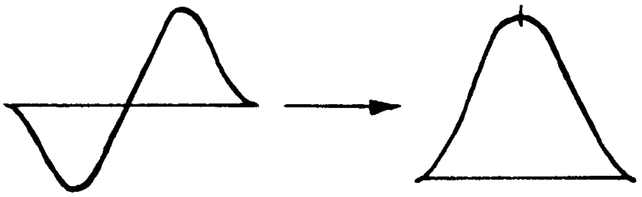
Item	Description
1. MW IF ALIGNMENT	
1-1 Conditions of the receiver.	
(1) Power source:	DC 12 V. (When the power is supplied directly to the tuner in the receiver, the voltage should be adjusted to the proper level which shall be required by the tuner.)
(2) Function switch position:	RADIO
(3) Band select switch:	MW
(4) Volume control:	Minimum gain position
(5) Tone control:	Center (Bass, Treble) position
(6) Variable capacitor:	Near the minimum capacity position where no signal come in.
1-2 Connection of Sweeper and the receiver	
(1) Tuner input:	Positive side to TP-7.
(2) Tuner output:	Positive side to TP-5. Negative side to TP-2.
1-3 Aligning position:	CFT1, IFT3
1-4 Alignment (Waveform):  **Fig. 17**	Adjust MW I.F.T. (above mentioned aligning position) so that maximum and symmetrical wave form can be obtained. In this case, the wavehead should be appeared at the center marker (455 kHz) on the scope of Sweeper.
2. FM IF ALIGNMENT	
2-1 Conditions of the receiver	
(1) Power source:	Same as mentioned in item 1-1
(2) Function switch position:	RADIO
(3) Band select switch:	FM
(4) Volume control:	Minimum gain position
(5) Tone control:	Center (Bass, Treble) position
(6) Variable capacitor:	Near the minimum capacity position where no signal come in.
2-2 Connection of Sweeper and the receiver	
(1) Tuner input:	Positive side to TP-1.
(2) Tuner output:	Positive side to TP-3. Negative side to TP-2.

NOTE

a) Attach a capacitor (30 pF) and a resistor (30 kΩ) in series to the positive side cable which shall be led from Sweeper input.

b) Attach a capacitor (30 pF) and a resistor (100 kΩ) in series to the positive side cable which shall be led from Sweeper output.

2-3 Aligning position:	a) IF Waveform:	IFT1
	b) Discriminate Waveform: ("S" curve waveform)	IFT2

Item	Description
2-5 Alignment (Waveform):	
a) IF Waveform:	Adjust the discriminate coil (IFT2) so that "S" curve waveform may be changed to IF waveform as shown in following figure.  Fig. 18 After above, adjust IFT1 so that max. sensitivity and symmetrical IF waveform can be obtained on the scope of Sweeper.
b) Discriminate Waveform:	Adjust the discriminate LFT2 again so that above symmetrical IF waveform may be changed to balanced "S" curve waveform.
3. MW RF ALIGNMENT	
3-1 Conditions of the receiver.	
(1) Power source:	Same as mentioned in item 1-1
(2) Function switch position:	RADIO
(3) Volume control:	50 mW
(4) Tone control:	Center (Bass, Treble) position
(5) Variable capacitor:	Refer the following list shown in item 3-4.
3-2 Conditions of SSG.	
(1) Modulation:	Refer the basic condition
(2) Frequency:	Refer the following list shown in item 3-4..
(3) Output level of the attenuator in SSG:	Approx. 50mW
3-3 Power output measuring position:	Speaker terminals

3-4 Alignment:

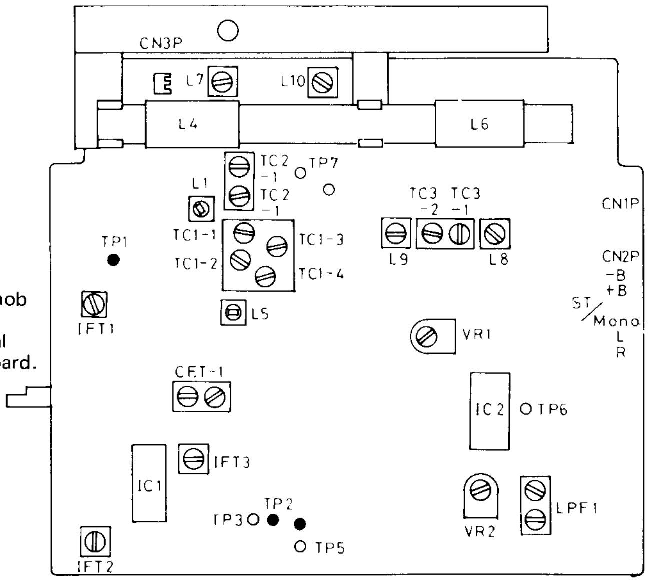
	Band Select Switch Position	Sort of Antenna to be attached to SSG	Frequency of SSC	Variable Capacitor Position	Aligning Position
1	LW	Loop Antenna	145 kHz	Max. capacity	L8
2			360 kHz	Min. capacity	TC3-1
3			Adjust the above aligning position (L8 & TC3-1) repeatedly so that the tuner can be received above frequency range (band width).		
4			160 kHz	to be received 160 kHz	L4
5			350 kHz	to be received 350 kHz	TC1-3
6			Adjust the above aligning position (L4 & TC1-3) repeatedly so that the tuner can be obtained the best sensitivity.		
7	MW	Loop Antenna	520 kHz	Max. capacity	L9
8			1,650 kHz	Min. capacity	TC3-2
9			Adjust the above aligning position (L9 & TC3-2) repeatedly so that the tuner can be received above frequency range (band width).		
10			620 kHz	to be received 620 kHz	L6
11			1,400 kHz	to be received 1,400 kHz	TC2-2
12			Adjust the above aligning position (L6 & TC2-2) repeatedly so that the tuner can be obtained the best sensitivity.		
13	SW	Dummy Antenna	5.8 MHz	Max. capacity	L10
14			18.6 MHz	Min. capacity	TC1-4
15			Adjust the above aligning position (L10 & TC1-4) repeatedly so that the tuner can be received above frequency range (band width).		
16			6.0 MHz	to be received 6 MHz	L7
17			18.0 MHz	to be received 18.0 MHz	TC2-1
18			Adjust the above aligning position (L7 & TC2-1) repeatedly so that the tuner can be obtained the best sensitivity.		

Item	Description
4. FM RF ALIGNMENT	
4-1 Conditions of the receiver	
(1) Power source:	Same as mentioned in item 1-1.
(2) Function switch position:	RADIO
(3) Band select switch:	FM
(4) Volume control:	50 mW
(5) Tone control:	Center (Bass, Treble) position
(6) Variable capacitor:	Refer the following list shown in item 4-3
4-2 Condition of FM SSG	
(1) Modulation:	Refer the basic condition
(2) Frequency:	Refer the following list shown in item 4-3.
(3) Output level of the attenuator in FM SSG:	The level shall be decided by the load resistance of the receiver mentioned in the basic conditions.

4-3 Alignment:

	Band Select Switch Position	Antenna to be attached to FM SSG	Frequency of FM SSG	Variable Capacitor Position	Aligning Position
1	FM	Dummy Antenna	87.5 MHz	Max. capacity	L5
2			109.0 MHz	Min. capacity	TC1-1
3			Adjust the above aligning position (L5 & TC1-1) repeatedly so that the tuner can be received above frequency range (band width).		
4			90 MHz	to be received 90 MHz	L1
5			106 MHz	to be received 106 MHz	TC1-1
6			Adjust the above aligning position (L1 & TC1-1) repeatedly so that the tuner can be obtained the best sensitivity.		
7	Pilot Signal Alignment	1. Input 60 dB MONO Signal Freq. 98 MHz 2. Adjust the VR1, so that output frequency of TP6 may be obtained 19 kHz.			
8	Stereo Separation Alignment	1. Input 60 dB STEREO Signal Freq. 98 MHz 1 kHz 100% 2. Adjust the VR2, so that leakage level of CN2P (L or R) may be obtained minimum level. (Separation; more than 25 dB)			
9	Stereo Tuning LED checking	When adjusting stereo separation, check the LED lit with function switch at stereo mode and check the LED unlit at mono mode.			

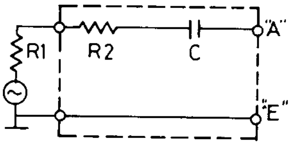
(A) Parts Location on Tuner P.C.B.



Turn the fine tuning knob so that its shaft cutting side become the vertical angle for tuner P.W. Board.

Fig. 19

(B) Dummy Antenna



R1 + R2 = 80 Ω
C = 10 pF
R1: Output impedance of S.S.G.

Fig. 20

Note;
FM ant. CN3P is 300Ω balanced output. If when connecting 50Ω or 75Ω unbalanced SSG, need match its impedance.

Block Diagrams

Amplifier Circuit

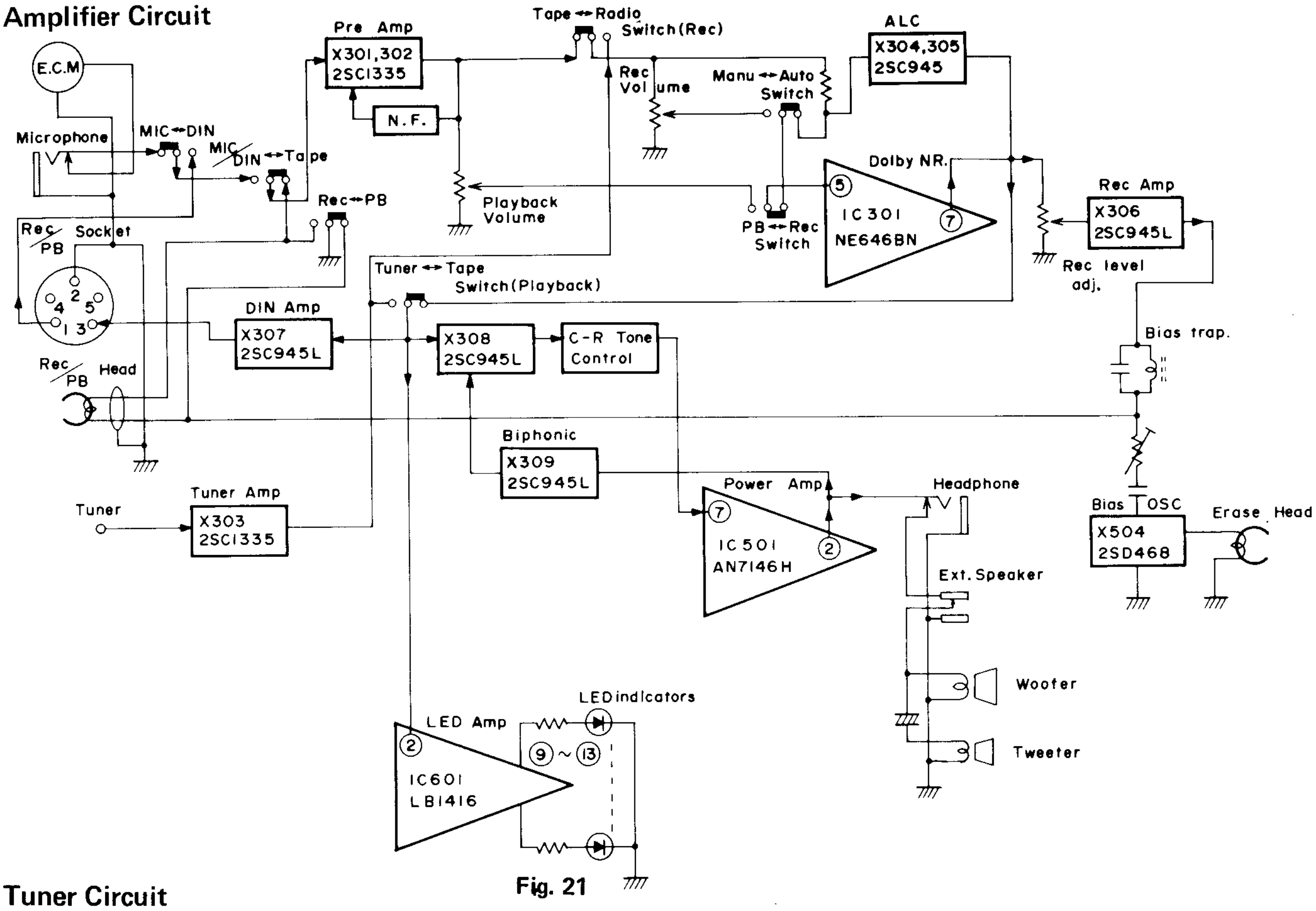

E.C.M
Microphone
MIC↔DIN
MIC/DIN↔Tape
Pre Amp
X301,302
2SC1335
N.F.
Tape↔Radio Switch(Rec)
Rec Volume
Manu↔Auto Switch
ALC
X304,305
2SC945
Dolby NR.
IC301
NE646BN
PB↔Rec Switch
Playback Volume
Rec↔PB
Rec/PB Socket
Rec/PB Head
Tuner↔Tape Switch(Playback)
DIN Amp
X307
2SC945L
X308
2SC945L
C-R Tone Control
Biphonic
X309
2SC945L
Rec Amp
X306
2SC945L
Rec level adj.
Bias trap.
Bias OSC
X504
2SD468
Erase Head
Tuner
Tuner Amp
X303
2SC1335
Power Amp
IC501
AN7146H
Headphone
Ext. Speaker
Wooter
Tweeter
LED Amp
IC601
LB1416
LEDindicators
9 ~ 13

Fig. 21

Tuner Circuit

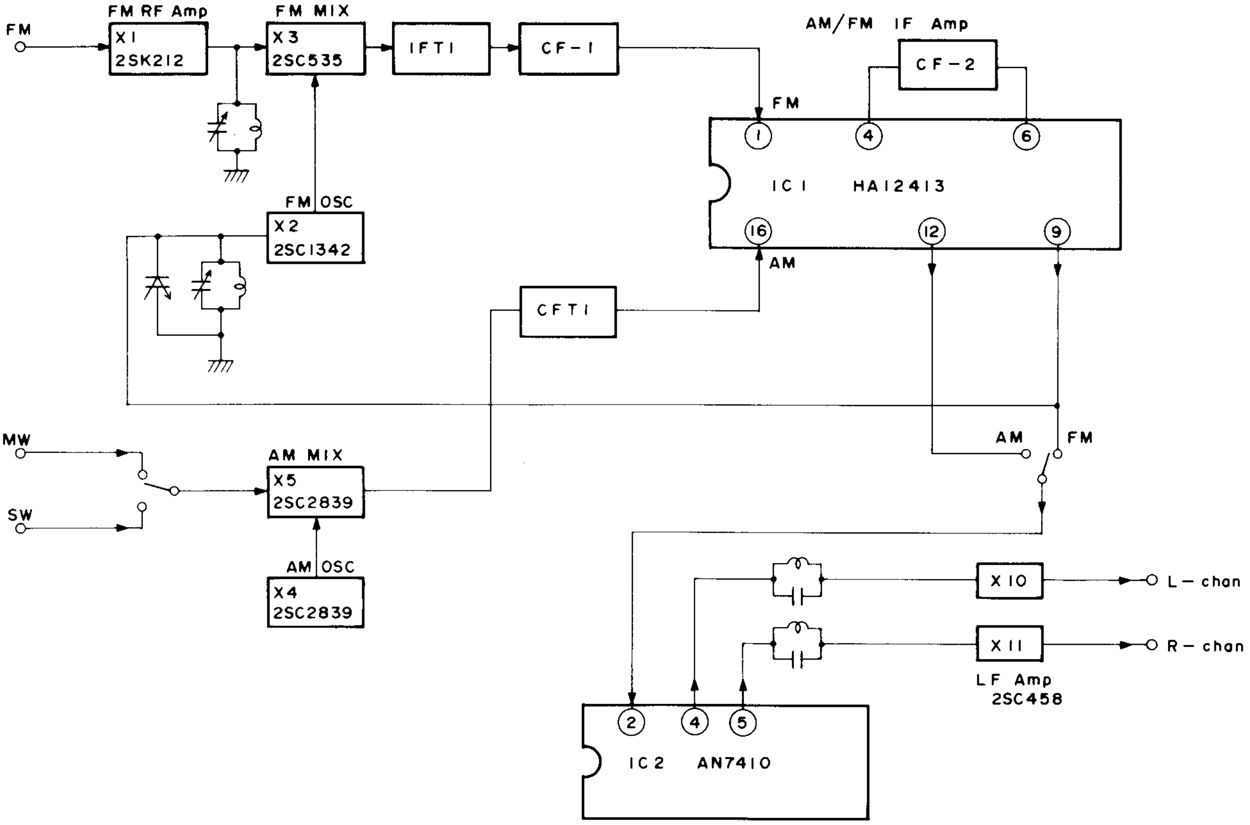
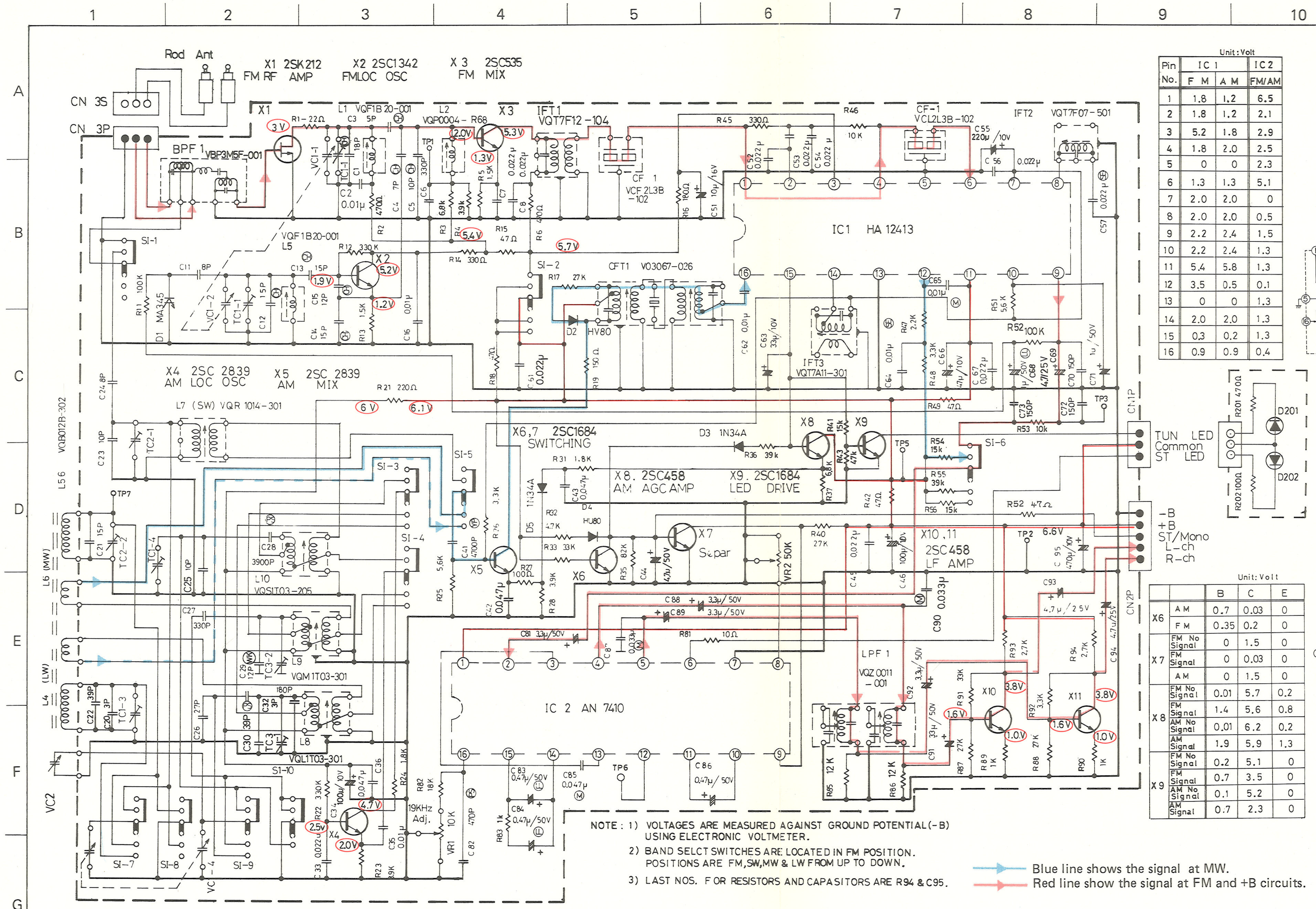

FM
FM RF Amp
X1
2SK212
FM MIX
X3
2SC535
IFT1
CF-1
FM OSC
X2
2SC1342
AM/FM IF Amp
CF-2
IC1 HA12413
FM
AM
CFT1
MW
SW
AM MIX
X5
2SC2839
AM OSC
X4
2SC2839
AM
FM
X10
X11
L-chan
R-chan
LF Amp
2SC458
IC2 AN7410
MPX

Fig. 22

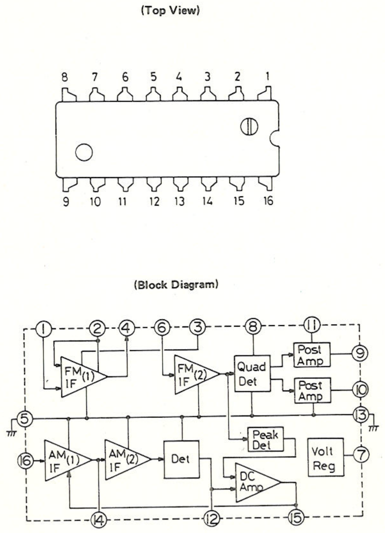
Schematic Diagram of RC-656L/LB (Tuner Circuit)


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
Rod Ant
FM
X1 2SK212 FM RF AMP
X2 2SC1342 FMLOC OSC
X 3 2SC535 FM MIX
CN 3S
CN 3P
BPF 1 VBP3M5F-001
L1 VQF1B20-001
L2 VQP0004-
IFT1 VQT7F12-104
CF 1 VCF2L3B-102
CF-1 VCL2L3B-102
IFT2 VQT7F07-501
IC1 HA 12413
VQF1B20-001 L5
CFT1 V03067-026
IFT3 VQT7A11-301
X4 2SC 2839 AM LOC OSC
X5 2SC 2839 AM MIX
L7 (SW) VQR 1014-301
X6,7 2SC1684 SWITCHING
D3 1N34A
X8 X9
X8. 2SC458 AM AGC AMP
X9. 2SC1684 LED DRIVE
X7 Separ
X10,11 2SC458 LF AMP
VR2 50K
L10 VQSIT03-205
L9 VQM1T03-301
L8 VQL1T03-301
IC 2 AN 7410
LPF 1 VQZ 0011-001
19KHz Adj.
VR1
TUN LED
Common
ST LED
R201 470Ω
R202 100Ω
D201
D202
CN1P
CN2P
-B
+B
ST/Mono
L-ch
R-ch
TP2 TP3 TP5 TP6 TP7
SI-1 SI-2 SI-3 SI-4 SI-5 SI-6 SI-7 SI-8 SI-9 SI-10
L6 (MW)
L4 (LW)
L56
VQB012B-302
VC2
3 V
2.0V
5.3V
1.3V
5.4V
5.7V
1.9V
5.2V
1.2V
6 V
6.1V
3.8V
1.6V
1.0V
3.8V
1.6V
1.0V
4.7V
2.5V
2.0V

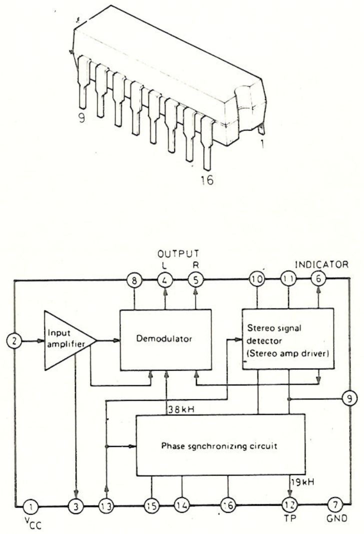
Unit : Volt

Pin No.	IC 1		IC 2
	F M	A M	FM/AM
1	1.8	1.2	6.5
2	1.8	1.2	2.1
3	5.2	1.8	2.9
4	1.8	2.0	2.5
5	0	0	2.3
6	1.3	1.3	5.1
7	2.0	2.0	0
8	2.0	2.0	0.5
9	2.2	2.4	1.5
10	2.2	2.4	1.3
11	5.4	5.8	1.3
12	3.5	0.5	0.1
13	0	0	1.3
14	2.0	2.0	1.3
15	0.3	0.2	1.3
16	0.9	0.9	0.4

IC1 HA12413


(Top View)
8 7 6 5 4 3 2 1
9 10 11 12 13 14 15 16
(Block Diagram)
FM(1) IF
FM(2) IF
Quad Det
Post Amp
Post Amp
AM(1) IF
AM(2) IF
Det
Peak Det
DC Amp
Volt Reg

IC2 AN7410


16
OUTPUT L R
INDICATOR
Input amplifier
Demodulator
Stereo signal detector (Stereo amp driver)
38kH
Phase synchronizing circuit
19kH
Vcc
TP
GND

Unit: Volt

		B	C	E
X6	AM	0.7	0.03	0
	FM	0.35	0.2	0
X7	FM No Signal	0	1.5	0
	FM Signal	0	0.03	0
	AM	0	1.5	0
X8	FM No Signal	0.01	5.7	0.2
	FM Signal	1.4	5.6	0.8
	AM No Signal	0.01	6.2	0.2
	AM Signal	1.9	5.9	1.3
X9	FM No Signal	0.2	5.1	0
	FM Signal	0.7	3.5	0
	AM No Signal	0.1	5.2	0
	AM Signal	0.7	2.3	0

NOTE : 1) VOLTAGES ARE MEASURED AGAINST GROUND POTENTIAL(-B) USING ELECTRONIC VOLTMETER.

2) BAND SELCT SWITCHES ARE LOCATED IN FM POSITION. POSITIONS ARE FM,SW,MW & LW FROM UP TO DOWN.

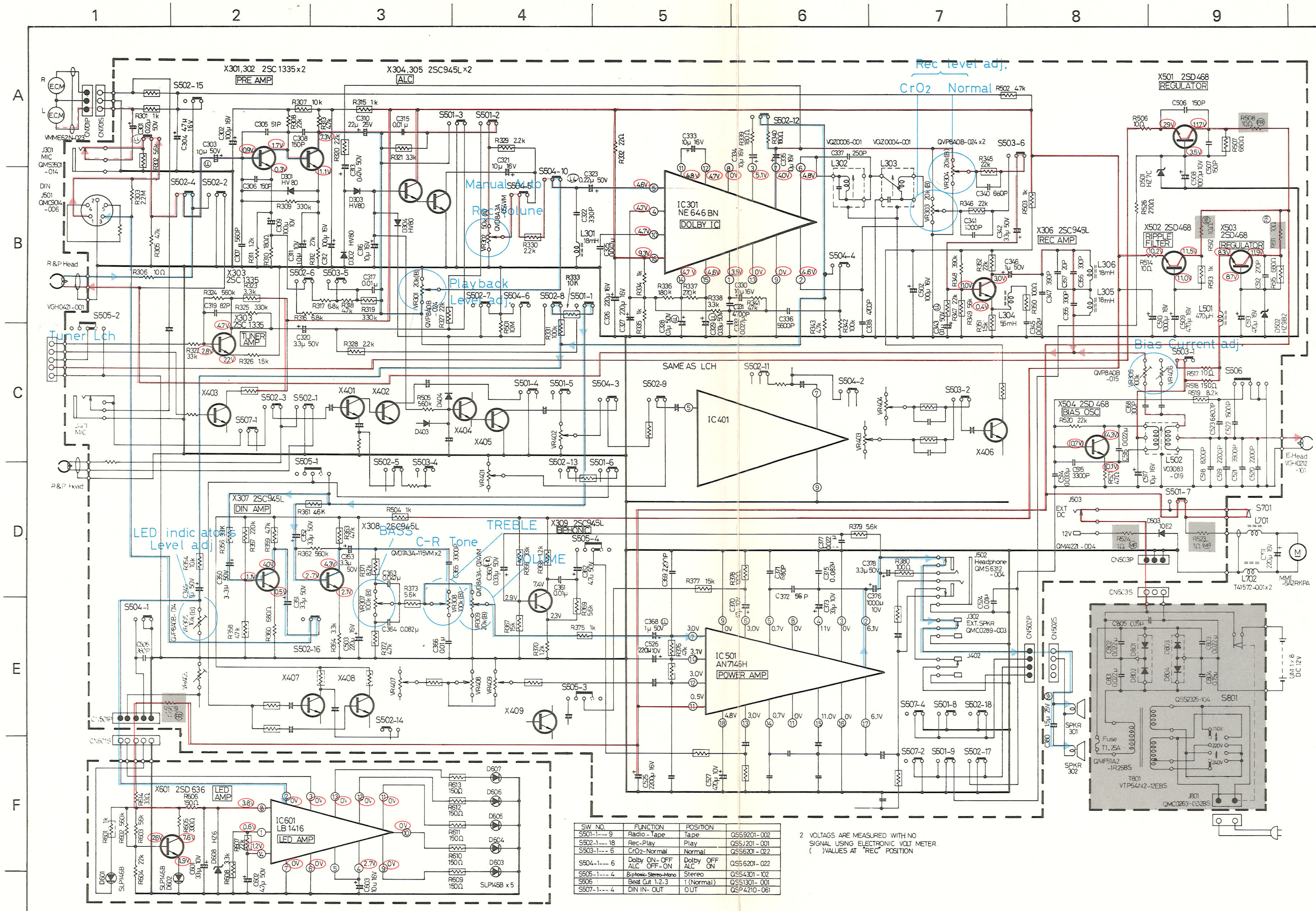
3) LAST NOS. FOR RESISTORS AND CAPASITORS ARE R94 & C95.

Blue line shows the signal at MW.

Red line show the signal at FM and +B circuits.

Fig. 23

Schematic Diagram of RC-656L/LB (Amplifier Circuit)

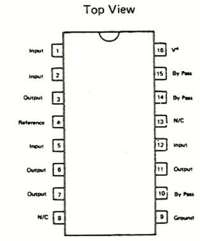

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
X301,302 2SC1335×2
PRE AMP
X304,305 2SC945L×2
ALC
Rec level adj.
CrO2 Normal
X501 2SD468
REGULATOR
IC301
NE646BN
DOLBY IC
Manual Auto
Rec Volune
Playback Level adj.
X303 2SC1335
X305 2SC1335
TUNER AMP
Tuner Lch
X306 2SC945L
REC AMP
X502 2SD468
RIPPLE FILTER
X503 2SD468
REGULATOR
Bias Current adj.
SAME AS LCH
IC401
X504 2SD468
BIAS OSC
X307 2SC945L
DIN AMP
X308 2SC945L
X309 2SC945L
BIPHONIC
LED indicators Level adj.
BASS
C-R Tone
TREBLE
VOLUME
IC501
AN7146H
POWER AMP
J502 Headphone
J302 EXT. SPKR
SPKR 301
SPKR 302
T801
X601 2SD636
LED AMP
IC601
LB1416
LED AMP
D607
D606
D605
D604
D603
SLP145B×5

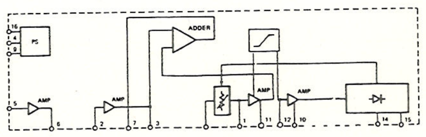
SW NO.	FUNCTION	POSITION	
S501-1--- 9	Radio - Tape	Tape	QSS9201-002
S502-1--- 18	Rec-Play	Play	QSSJ201-001
S503-1--- 6	CrO2-Normal	Normal	QSS6201-022
S504-1--- 6	Dolby ON-OFF ALC OFF-ON	Dolby OFF ALC ON	QSS6201-022
S505-1--- 4	Biphonic-Stereo-Mono	Stereo	QSS4301-102
S506	Beat Cut 1-2-3	1 (Normal)	QSS1301-001
S507-1--- 4	DIN IN- OUT	OUT	QSP4210-061

2 VOLTAGS ARE MEASURED WITH NO SIGNAL USING ELECTRONIC VOLT METER.
( )VALUES AT "REC" POSITION

IC301 401 NE646BN Dolby NR

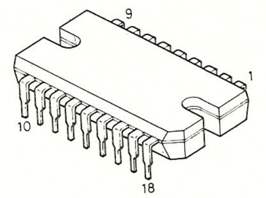
Top View

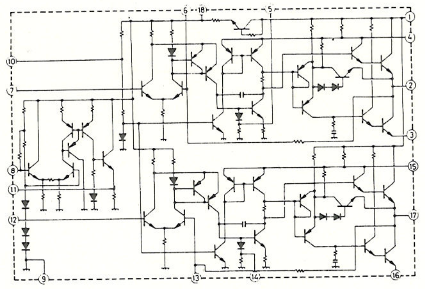




Block diagram

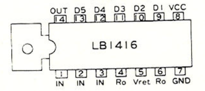
IC501 AN7146H Power Amp

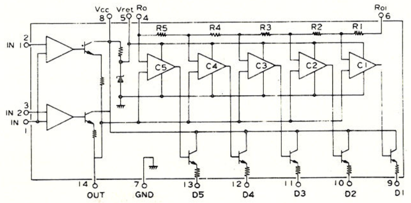




IC601 LB1416 LED Amp

(Top view)


OUT
D5
D4
D3
D2
D1
VCC
LB1416
IN
IN
Ro
Vret
Ro
GND

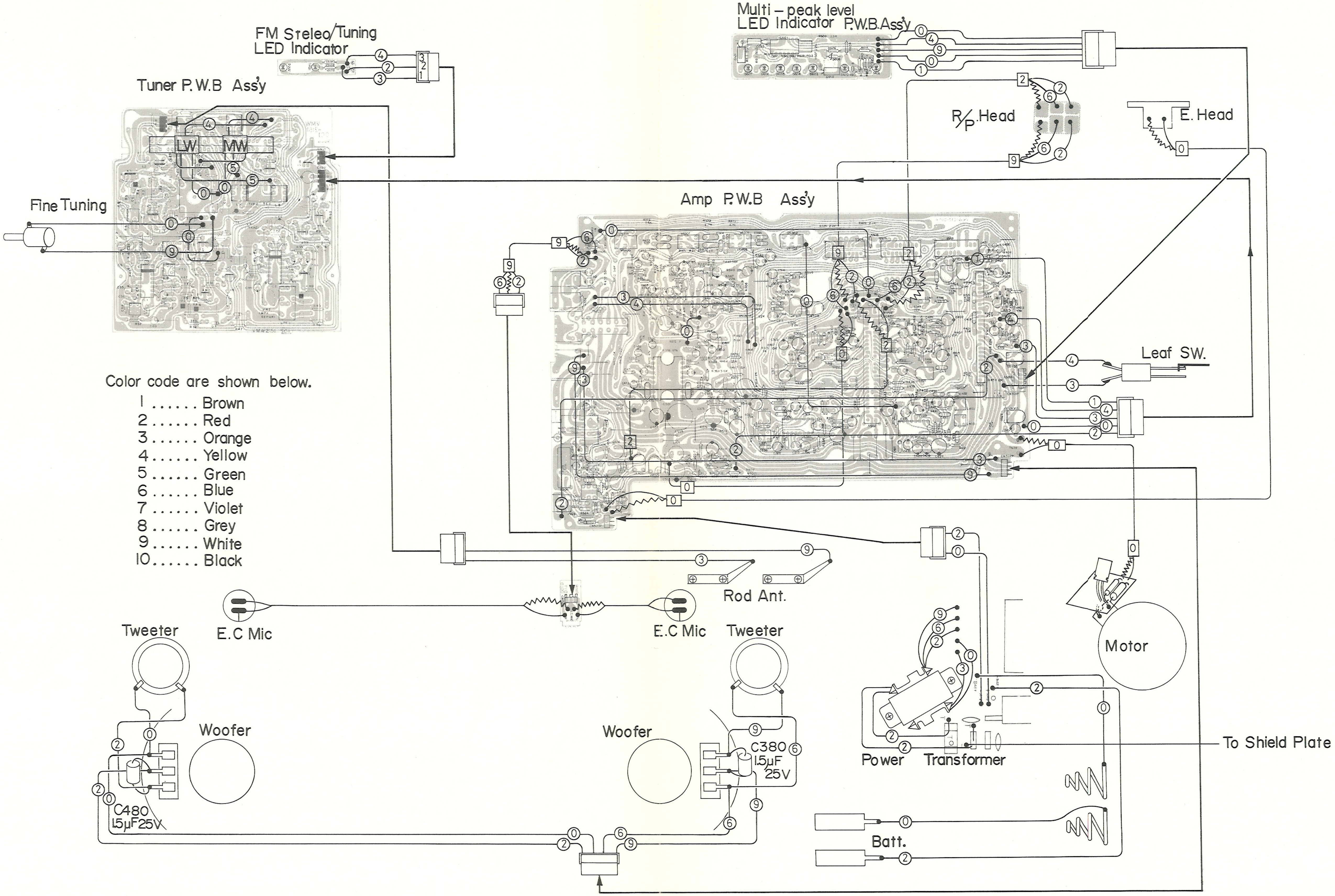

Vcc
Vret
Ro
R5
R4
R3
R2
R1
C5
C4
C3
C2
C1
IN 1
IN 2
OUT
GND
D5
D4
D3
D2
D1

Equivalent circuit

Blue line shows the signal at playback.
Red line show the signal at recording and +B circuits.
(▨) parts are safety assurance parts. When replacing those parts, make sure to use the specified one.

Fig. 24

Wiring Connection

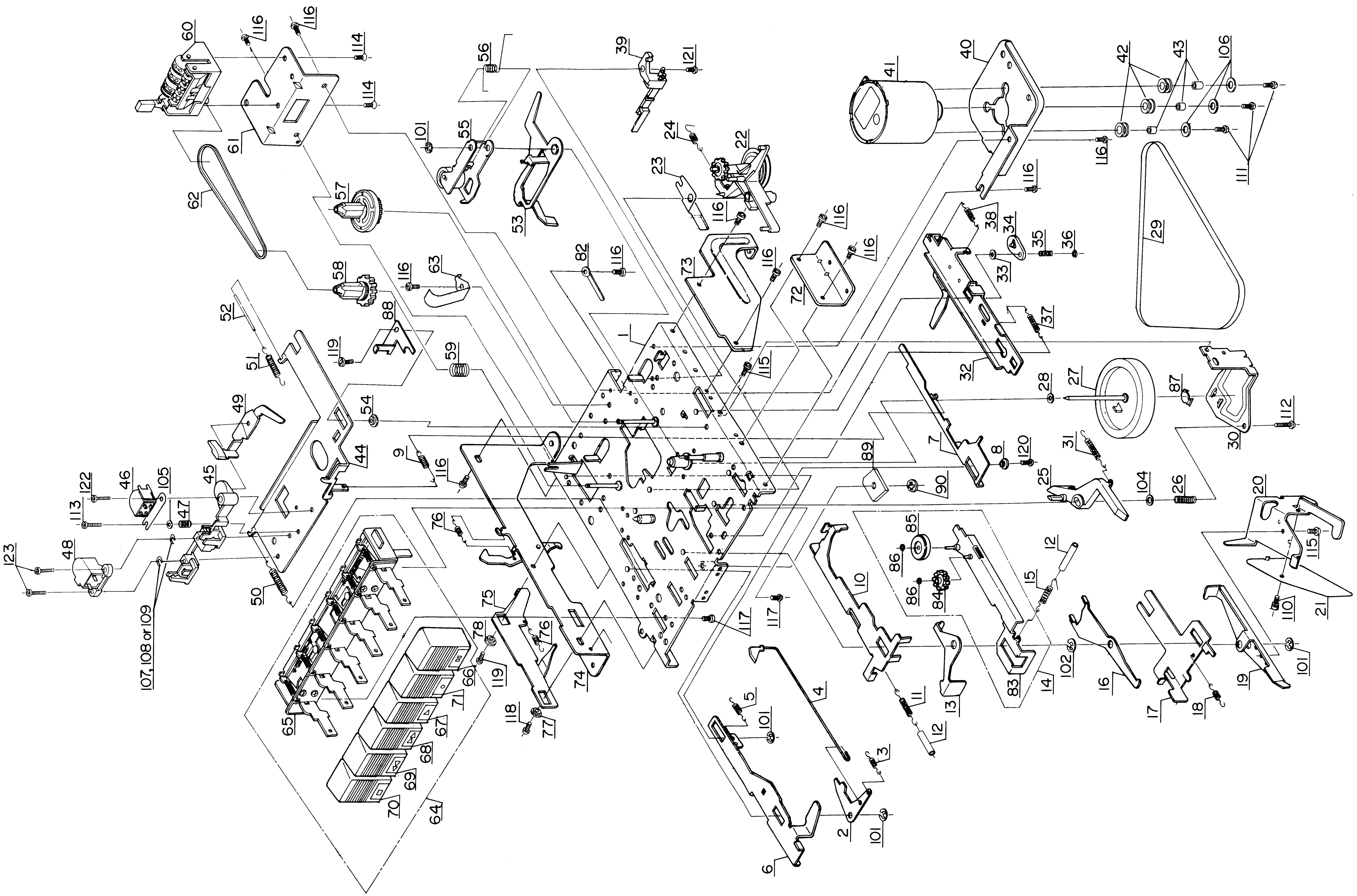

FM Stereo/Tuning
LED Indicator
Multi – peak level
LED Indicator P.W.B.Ass'y
Tuner P.W.B Ass'y
LW
MW
Fine Tuning
R/P.Head
E. Head
Amp P.W.B Ass'y
Leaf SW.
Rod Ant.
E.C Mic
E.C Mic
Tweeter
Tweeter
Woofer
Woofer
C480
1.5μF25V
C380
1.5μF
25V
Motor
Power Transformer
To Shield Plate
Batt.

Color code are shown below.

1 ...... Brown
2 ...... Red
3 ...... Orange
4 ...... Yellow
5 ...... Green
6 ...... Blue
7 ...... Violet
8 ...... Grey
9 ...... White
10 ...... Black

Fig. 25

Mechanical Component Parts


60
116
116
114
114
61
62
57
58
52
51
63
88
119
116
59
54
49
44
9
116
46
105
45
122
113
47
123
48
50
107,108 or 109
56
101
55
53
82
116
39
121
24
22
23
116
73
116
72
116
116
1
115
41
40
42
43
106
116
111
29
116
38
34
33
35
36
37
32
28
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87
112
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7
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120
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89
90
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104
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115
110
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118
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85
86
86
84
12
15
83
14
11
12
13
102
16
17
18
19
101
4
5
101
3
2
101
6

Fig. 26

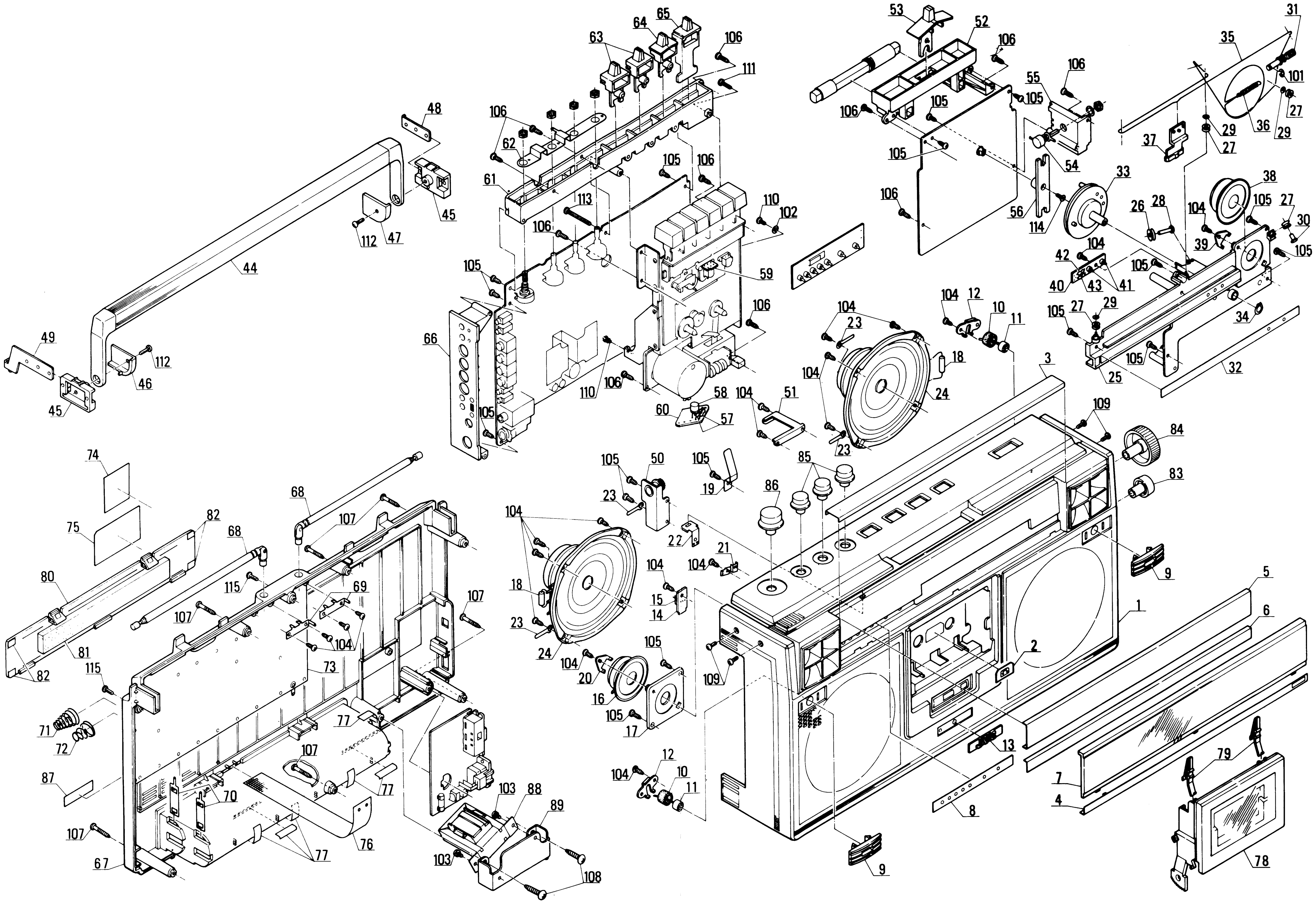
Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	14310182ZT	Mecha Chassis Ass'y		1
2	13970201T	Rec. Safety Lever		1
3	2980802T	Spring		1
4	14310291ZT	Rec. Safety Spoke Ass'y		1
5	180502BT	Rec. Slide Lever Spring		1
6	14310201T	Rec. Slide Lever		1
7	13971002T	Play Slide Lever		1
8	090302T	Play Slide Lever Collar		1
9	13490301T	RC Spring		1
10	12001001T	Main Plate		1
11	7380702T	Main Plate Spring		1
12		Tube	φ3.5 x 18	2
13	14311004T	Rewind Arm		1
14	12000891ZT	FF. Idler Arm Ass'y		1
15	6300403T	FF. Idler Arm Spring		1
16	13371901T	RC Lever		1
17	14311901T	RC Slide Lever		1
18	580702T	Spring	for RC Side	1
19	13970205T	Record Lever		1
20	14310203T	Record Bracket		1
21	14310202T	Record Spring Plate		1
22	14310792ZT	R. F. Clutch Ass'y		1
23	14631010T	Rew. Spring Plate		1
24	12000709T	R. F. Clutch Arm Spring		1
25	12001102T	Auto Stop Lever		1
26	14310901T	Thrust Spring		1
27	12000903ZT	Flywheel Ass'y		1
28	4081120T	Nylon Washer		1
29	12000904T	Main Belt		1
30	12000901	Flywheel Bracket		1
31	15790901T	Auto Stop Lever Spring		1
32	14071781ZT	Pause Slide Lever Ass'y		1
33	15101201T	Collar	or REE2500 (E Ring)	1
34	12221702T	Pause Lever		1
35	13231701T	Pause Lever Spring		1
36	12601501T	Special Washer	Nylon φ1.7 x φ5 x t0.4	1
37	180502BT	Spring	for Pause Slide Lever	1
38	180311T	"	for Pause Arm	1
39	MSW-0087NKT	Leaf Switch		1
40	13971201T	Motor Bracket		1
41	14311296ZT	Motor Ass'y		1
42	F4641-001	Rubber Cushion		3
43	14311202T	Collar		3
44	12600301T	Head Panel		1
45	12000302T	Head Block		1
46	VGH0421-001	R/P Head		1
47	15600305T	R/P Head Spring		1
48	VGH0212-101	E. Head		1
49	12001193ZT	Detect Plate Ass'y		1
50	14000303T	Head Panel Spring (L)		1
51	12000303T	" (R)		1
52		Tube	φ1.4 x φ0.8 x L24	1
53	14311701T	Pause Arm Lever		1
54	4080411T	Head Panel Collar		1
55	12600491ZT	Pinch Roller Ass'y		1
56	12600402T	Pinch Roller Spring		1
57	12000591ZT	Take-up Reel Ass'y		1
58	13970691ZT	Supply Reel Ass'y		1
59	12910601T	Spring	for Back Tension	1
60	VKC5127-002S	Tape Counter		1
61	14311801T	Counter Bracket		1
62	3091001T	Counter Belt		1
63	6010101T	Pack Spring		1
64	14311494	Push Button Switch Composite Ass'y		1
65	13971492ZT	Push Button Switch Ass'y		1
66	VXP3054-001	Push Button		1
67	" -002	"	PAUSE PLAY	1
68	" -003	"	FF	1
69	" -004	"	REW	1
70	" -005	"	STOP/EJECT	1
71	" -006	"	REC	1
72	14311001T	Slide Bracket (A)		1
73	14311002T	" (B)		1
74	14311382ZT	Eject Bracket Ass'y		1
75	13971302T	Eject Lever		1
76	581205T	Spring		2
77	4080411T	Collar		1
78	9071904T	"		1
82	4660901T	Cord Clamp		1
83	12000891ZT	FF Idler Arm Sub Ass'y		1
84	12000802T	Idler Gear		1
85	12000804T	Take-up Roller		1
86	12001503T	Washer		2
87	12000906T	Spacer		1
88	13971005T	Guide Plate		1
89	15790103T	Rubber Sheet		1
90	RDS3000F	CS Ring		1
101	REE2500	E Ring		4
102	REE4000	"		1
104	WNS3000Z	Washer		1
105	WSS2000Z	"		1
106	14311203T	"		3
107	13270412AT	U Washer	refer to Note	2
108	13270412BT	"		2
109	13270412CT	"		2
110	LPSP2605Z	Ass'y Screw		3
111	SPSP2609Z	Screw		3
112	SPSP2618Z	"		1
113	SPSX2011R	PM Screw		1
114	SSSP3005ZS	Screw		2
115	10PZ2605T	Tams Screw		2
116	20PZ26040T	Tap Screw	for Counter Bracket x 2 Pack Spring x 1 Side Bracket (A) x 2 Side Bracket (B) x 2 Eject Bracket x 1 Motor Bracket x 2	11
117	20PZ26050T	"		2
118	20PZ26060T	"		1
119	20PZ26070T	"		2
120	20PZ26080T	"		1
121	23PZ26050T	"	for Leaf Switch x 1	1
122	72PZ20110T	Cap Screw		1
123	72PZ20120T	"		2

Note:
The U-washers are provided for adjusting the height of erase head. They may not be used, if the head height is normal value. Choose one of three types (thickness) of U-washers according to the size of erase head when replacing it.

Parts No.	Thickness	Material
13270412AT	0.1 mm	Phosphor-bronze
13270412BT	0.2 mm	Brass
13270412CT	0.3 mm	Aluminium

Assembly Parts


48
45
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102
105
59
66
106
110
106
105
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106
55
106
105
105
106
105
106
56
114
54
33
31
35
101
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28
104
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30
39
104
105
42
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43
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105
27
29
34
105
25
32
104
12
10
11
104
23
104
18
24
23
104
51
3
109
84
83
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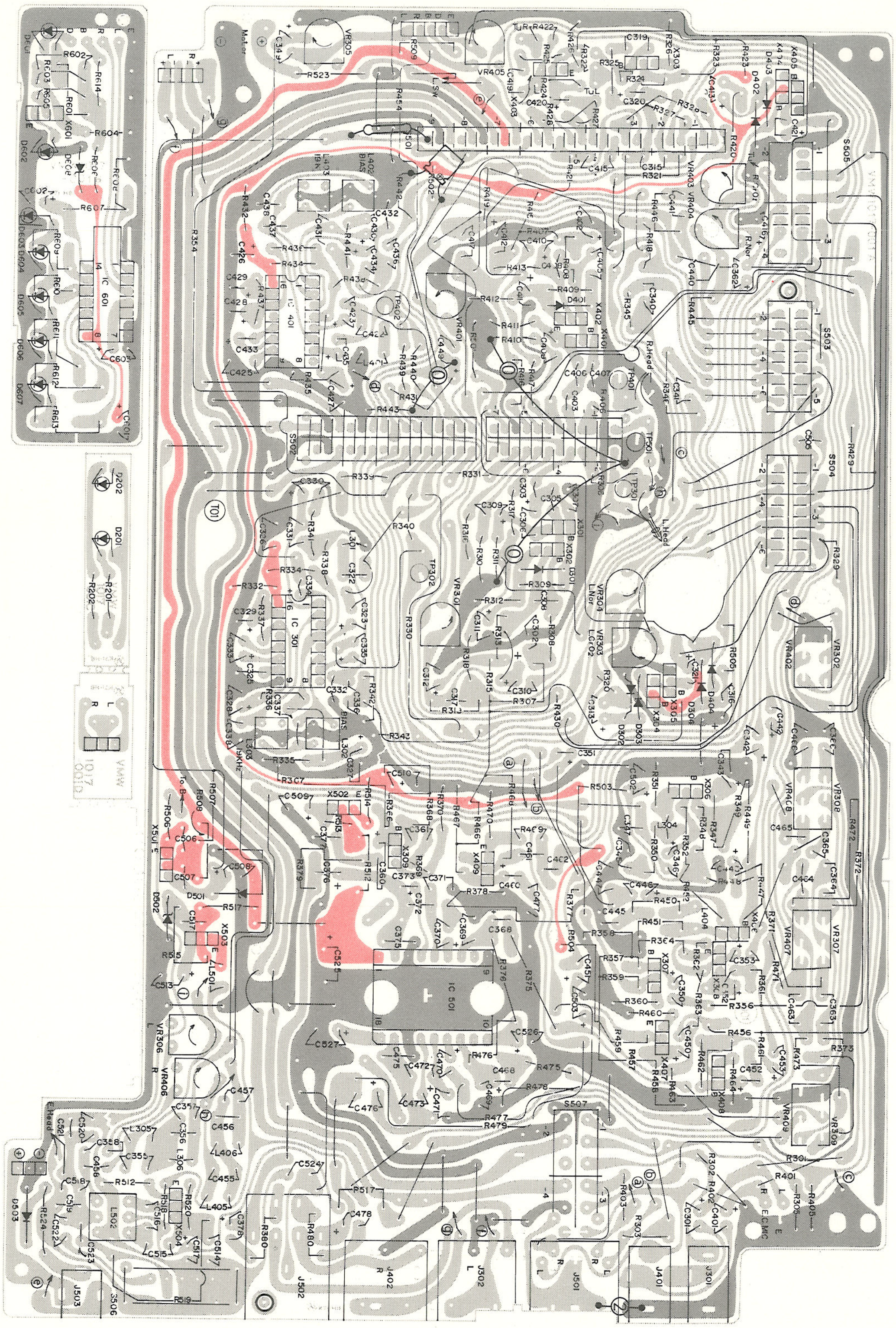
Assembly Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1~9,13,21,22	ZCRC656L-CBF	Front Cabinet Ass'y		1 set
1	VJC1120-001	Front Cabinet		1
2	VJD4005-002	Reflection Plate		1
3	VJD4412-001	Button Plate		1
4	VJD4413-001	Fitting		1
5	VJK3159-001	Dial Scale (A)		1
6	VJK3160-001	Dial Scale (B)		1
7	VJK3161-001	Dial Lens		1
8	VJK4123-001	Scale Plate (A)		1
9	VJD4414-001	Mic Escutcheon		2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
10	VYH4102-001	Mic Bushing		2
11	VMME62N-D23	E. C. Mic		2
12	VYH4298-001	Holder		2
13	QXM2251-003	Mark		1
14	VMW1017-001D	P. W. Board	for Mic	1
15	QMV5005-003	Connector	CN701-1 ~ 3	1
16	EAS5PH08SA	Speaker	SPK302	1
17	VYH4565-001	Tweeter Holder		1
18	QEN21EM-155	N. E. Capacitor	C380, 480	2
19	VKY4165-001	Door Spring		1
20	VYH4352-002	Clamp	for Tweeter	1
21	V44981-001	Earth Catcher		1
22	VYH4389-001	"		1
23	VKZ4001-007	Wire Holder		6
24	EAS16P127SG	Speaker	SPK301 SPK401	2
25	VYH2122-001	Chassis Base		1
26	VYH4032-001	Roller		1
27	VYH4002-001	"		4
28	RTA4020	Rivet		1
29	V42562-1	Special Washer		3
30	RTA4010	Rivet		1
31	V41336-021	Tuning Shaft		1
32	VJK4124-001	Scale Plate (B)		1
33	VYH3177-001	Dial Drum		1
34	RCSA6000	C. Ring		1
35	VHR2TT9-05A	Dial Rope	995 m/m	1 set
36	50153-3	Spring		1
37	VJN4049-00A	Needle Ass'y		1
38	EAS5PH08SA	Speaker	SPKR402	1
39	VYH4352-002	Clamp	for Tweeter	1
40	VMW1017-001C	P. W. Board	for Tuner LED	1
41	SLP146B	LED	D201, 202	2
42	QRD147J-471S	C. Resistor	R201	1
43	QRD147J-101S	"	R202	1
44	VJH3005-00N	Handle Ass'y		1
45	VYH3120-001	Handle Supporter		2
46	V44943-001	Washer (L)		1
47	V44944-001	" (R)		1
48	VYH4224-001	Bracket		1
49	VYH4566-001	Bracket		1
50	VYH4571-00A	Dump Ass'y		1
51	VYH4578-001	Connect Bracket	for Front Cabinet ~ Rear Cabinet	1
52	VYH2124-001	Tuner Chassis		1
53	VXQ3018-004	Toggle Lever	for Band	1
54	QAT5001-203	M. V. Capacitor	VC2	1
55	VYH4516-001	Fine Tuning Bracket		1
56	VYH4221-001	Arm		1
57	T41572-001	Inductor	L701, 702	2
58	QET41CR-227	E. Capacitor	C702	1
59	VMW3035-301	P. W. Board	for R/P Head	1
60	VMW3113-001	P. W. Board	for Motor	1
61	VYH2125-001	Holder		1
62	VYH4567-001	Earth Plate		1
63	VXQ3028-002	Toggle Lever		2
64	VXQ3032-001	"		1
65	VXQ3033-001	"		1
66	VJD3193-002	Jack Board		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
67,73,75 76,82,	ZCRC656L-CBR	Rear Cabinet Ass'y		1 set
67	VJC1121-001	Rear Cabinet		1
68	QZR4147-001U	Rod Antenna		2
69	VYH4189-001	Holder (B)		2
70	VYH4010-002	Battery Contact		2
71	53738-009	Spring		1
72	V44686-002	Spring		1
73	VYH4568-00A	Shield Ass'y		1
74	VND4027-001	Dolby Label		1
75	VYN5066-001CBS	Name Plate	RC-656LB	1
	VYN5066-002C	"	RC-656L	1
76	V41583-3	Tape		1
77	VYSA1R4-050	Spacer		2
78	VJT4029-00A	Cassette Door Ass'y		1
79	V44910-002	Cassette Spring		2
80,81	ZCRC656L-BCA	Battery Cover Ass'y		1 set
80	VJC2016-004	Battery Cover		1
81	VYSH106-020	Spacer		1
82	VYSA1R6-009	"		4
83	VXKM520-20013	Knob		1
84	VXL4008-002	Tuning Knob		1
85	VXL4122-002	Knob		3
86	VXL4123-002	"		1
87	53866-2	Label		1
88	VTP54N2-12ES	Power Transformer	RC-656LB	1
	VTP54N2-12E	"	RC-656L	1
89	VY4570-001	Trans Bracket		1
101	REE3000X	E Ring	Chassis base	1
102	WBS3000N	Washer	P.W.B. ~ Mecha	1
103	DPSP3006ZS	Ass'y Screw	Trans Bracket	2
104	SBSF3008Z	Tapping Screw	E. C. Mic. Holder x 2 Mic Wire terminal x 1 Tweeter x 2 Earth Catcher x 1 Woofer x 8 L.E.D. P.W.B. x 1 Connect Bracket x 2 Holder (B) x 4	21
105	SBSF3010Z	"	Tweeter Holder ~ Front Cabinet x 2 Door Spring x 1 Chassis Ass'y ~ Front cabinet x 5 Dump Ass'y x 2 Tuner chassis ~ P.W.B. x 2 Fine Tuning Bracket x 1 Holder ~ P.W.B. x 2 Jack Board ~ P.W.B. x 2	17
106	SBSF3012C	"	Tuner CB ~ Front Cabinet x 3 Arm Ass'y ~ Front Cabinet x 5	8
107	SBSF3020R	"	Front Cabinet ~ Rear Cabinet	6
108	SBSF4020C	"	Trans Bracket	2
109	SDSP3010RS	Screw	Front Cabinet ~ Rear Cabinet x 2 Bracket x 4	6
110	SPSP3006VS	"	P. W. B ~ Mecha	2
111	SPSP3012VS	"	"	1
112	SPSP3014ZS	"	Bracket	2
113	SPSP3035VS	"	P. W. B ~ Mecha	1
114	SSSP2610Z	Tapping Screw	for Arm	1
115	SDSP3010RS	Screw	Front Cabinet ~ Rear Cabinet	2

Amplifier P.W. Board Parts


IC 601
IC 401
IC 301
IC 501
S502
S503
S504
S505
S507
VR305
VR405
VR301
VR302
VR303
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VR306
VR307
VR308
VR309
VR402
VR406
VR407
VR408
VR409
J301
J302
J401
J402
J501
J502
J503
D201
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D601
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D604
D605
D606
D607
TP301
TP302
TP401
TP402
L.Head
R.Head
Motor
E.Head
T01

Fig. 27

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC301,401	NE646BN	Dolby NR	3.5	4.6	5.1	4.7	4.6	4.8	4.0	0	0	4.7	4.8	4.7	0	4.7	4.6	9.3		
IC501	AN7146H	Power Amp.	0.5	6.1	0	11	0.7	3.0	3.0	0	0	3.1	0	3.0	3.0	0.7	11.0	0	6.1	4.8

			1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC601	LB1416	LED Amp.	0.6	0	0	2.7	2.7	0	0	3.8	0	0	0	0	0	1.2

			E	C	B
X601	2SD636	LED Amp.	1.9	7.6	2.6

			E	C	B
X301,401	2SC1335	Pre Amp.	0.3	1.7	0.9
X302,402	2SC1335	Pre Amp.	1.1	7.3	1.7
X303,403	2SC1335	Tuner Amp.	2.2	4.7	2.8
X306,406	2SC945L	Rec Amp.	0.4	3.0	1.0
X307,407	2SC945L	DIN Amp.	0.5	4.0	1.1
X308,408	2SC945L	Amp.	2.1	4.3	2.7

			E	C	B
X309,409	2SC945L	Biphonic	2.3	7.4	2.9
X501	2SD468	Ripple Filter	2.9	11.7	3.5
X502	2SD468	Ripple Filter	10.2	11.5	11.0
X503	2SD468	Regulator	8.3	11.9	8.7
X504	2SD468	Bias OSC	0.1	4.3	0.7

Amplifier P.W. Board Parts

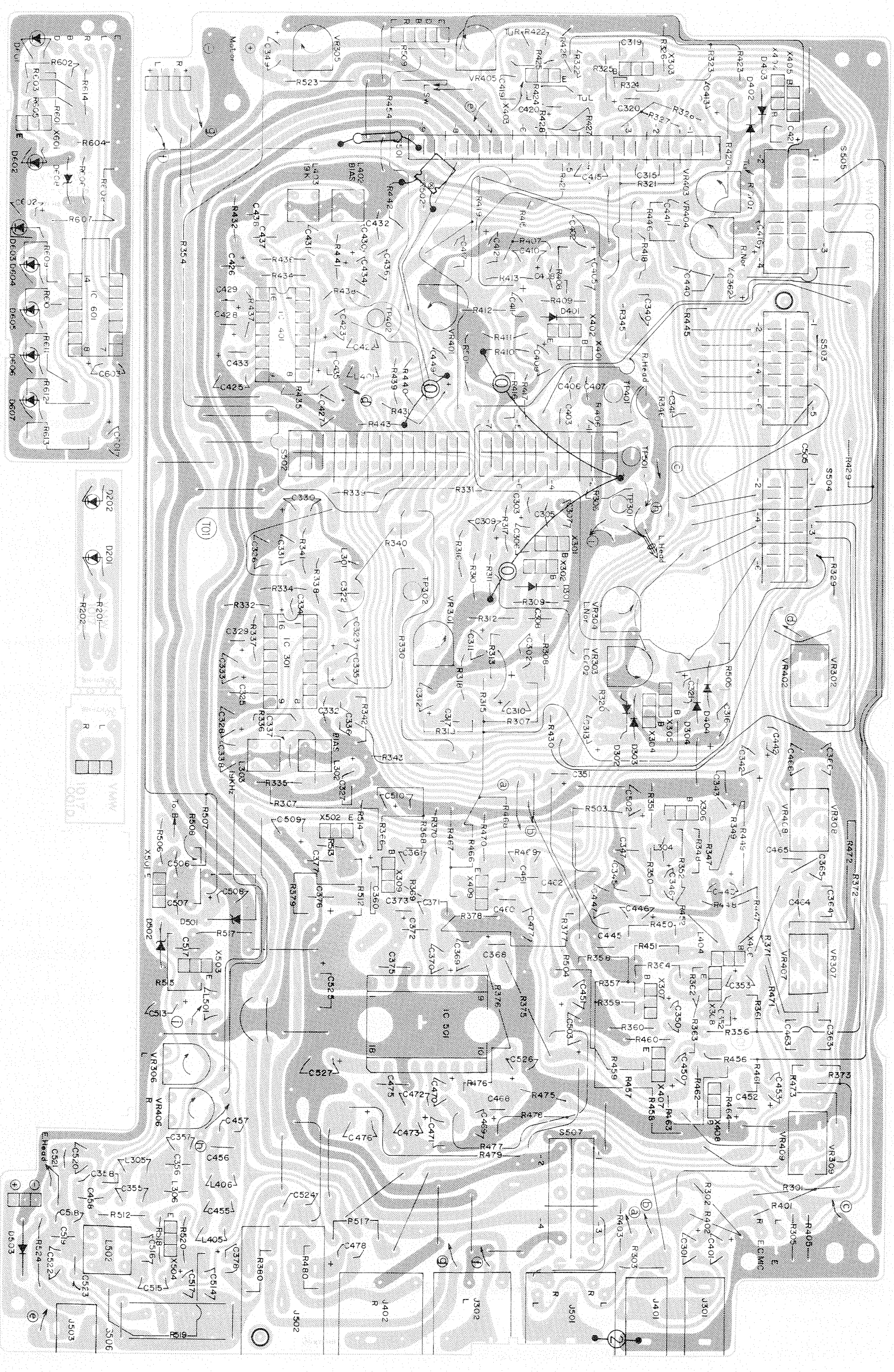


Fig. 27

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
IC301,401	NE646BN	Dolby NR	3.5	4.6	5.1	4.7	4.6	4.8	4.0	0	0	4.7	4.8	4.7	0	4.7	4.6	9.3		
IC501	AN7146H	Power Amp.	0.5	6.1	0	11	0.7	3.0	3.0	0	0	3.1	0	3.0	3.0	0.7	11.0	0	6.1	4.8

			1	2	3	4	5	6	7	8	9	10	11	12	13	14
IC601	LB1416	LED Amp.	0.6	0	0	2.7	2.7	0	0	3.8	0	0	0	0	0	1.2

			E	C	B
X601	2SD636	LED Amp.	1.9	7.6	2.6

			E	C	B
X301,401	2SC1335	Pre Amp.	0.3	1.7	0.9
X302,402	2SC1335	Pre Amp.	1.1	7.3	1.7
X303,403	2SC1335	Tuner Amp.	2.2	4.7	2.8
X306,406	2SC945L	Rec Amp.	0.4	3.0	1.0
X307,407	2SC945L	DIN Amp.	0.5	4.0	1.1
X308,408	2SC945L	Amp.	2.1	4.3	2.7

			E	C	B
X309,409	2SC945L	Biphonic	2.3	7.4	2.9
X501	2SD468	Ripple Filter	2.9	11.7	3.5
X502	2SD468	Ripple Filter	10.2	11.5	11.0
X503	2SD468	Regulator	8.3	11.9	8.7
X504	2SD468	Bias OSC	0.1	4.3	0.7

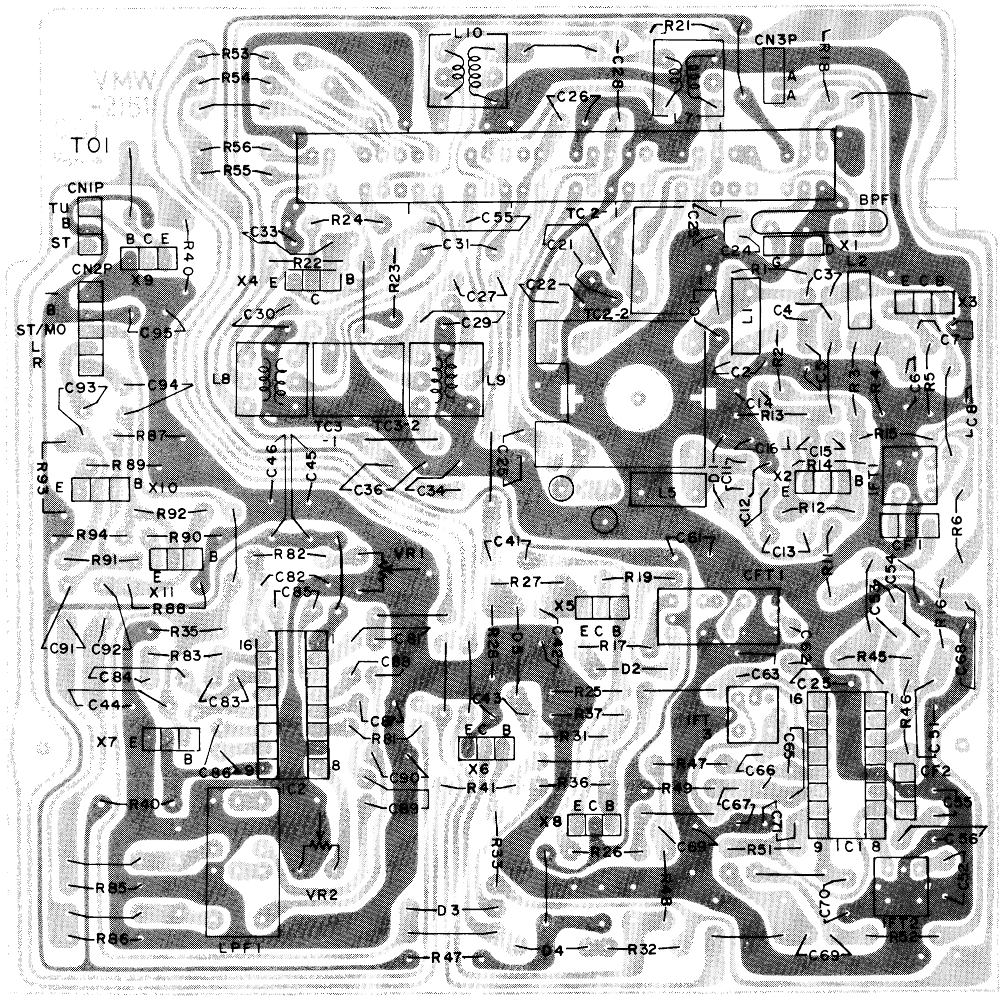
Amp. P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	VMW1017-001A	P. W. Board	for Amp	
	VMW1017-001B	″	for LED	
S501-1---9	QSS9201-002	Slide Switch		1
S502-1---18	QSSJ201-001	″		1
S503-1---6	QSS6201-102	″		2
S504-1---6				
S505-1---4	QSS4301-023	″		1
S506	QSS1301-001	″		1
S507-1---4	QSP4210-061	Push Switch		1
J301, 401	QMS3501-014	Socket		2
J302, 402	QMC0289-003	DIN SPK Socket		2
J501	QMC9014-006	DIN Socket		1
J502	QMS6312-004	Headphone Jack		1
J503	QMA1221-004	Ext. Batt. Jack		1
VR301, 401, 303 403, 304, 404	QVP8A0B-024	V. Resistor		6
VR302, 402	QVD8A3A-054VM	″		1
VR305, 405	QVP8A0B-014	″		2
VR306, 406	″ -015	″		2
VR307, 407 308, 408	QVD7A3B-115VM	″		2
VR309, 409	QVD8A3A-024VM	″		1
IC301, 401	NE646BN	IC		2
IC501	AN7146 (H)	″		1
IC601	LB1416	″		1
X301, 401, 302 402, 303, 403	2SC1335 (D)	Transistor		6
X304, 404, 305 405, 306, 406 307, 407, 308 408, 309, 409	2SC945L (Q,P)	Transistor		12
X501, 502 503, 504	2SD468 (B, C)	″		4
X601	2SD636 (R, S)			1
D301, 401, 302 402, 303, 403 304, 404	HV80	Si. Diode		8
D501	HZ7C	Zener Diode		1
D502	HZ9B2	″		1
D503	10E2-B	″		1
D601 ~607	SLP146B	Si. Diode		7
D608	HZ6B	Zener Diode		1
L301, 401, 305 405, 306, 406	VQP0001-183	Inductor		6
L302, 402	VQZ0006-001	Dolby Filter		2
L303, 403	VQZ0004-001	″		2
L304, 404	VQP0001-562	Inductor		2
L501	VQP0002-471M	″		1
L502	V03083-019	OSC Coil		1
C301, 401 323, 423	QEB41HM-224	E. Capacitor (Low Leak)	0.22 μF 50 V	4
C302, 402, 312 412, 502	QET41CR-107	E. Capacitor	100 μF 16 V	5
C303, 403	QEB41EM-106M	E. Capacitor (Low Leak)	10 μF 25 V	2
C304	QET41CR-476	E. Capacitor	47 μF 16 V	1
C305, 405	QCS11HJ-510	C. Capacitor	51 pF 50 V	2
C306, 406, 308 408, 506, 507	″ -151	″	150 pF ″	6
C307, 407	″ -561	″	560 pF ″	2

Ref. No.	Parts No.	Parts Name	Remarks		Q'ty
C309, 409	QET41AR-107	E. Capacitor	100 µF	10 V	2
C310, 410	QET41ER-226	″	22 µF	25 V	2
C313, 413	QET41HR-474	″	0.47 µF	50 V	2
C315, 415, 317 417, 361, 461 366, 466, 524	QFM41HJ-103	Mylar Capacitor	0.01 µF	″	9
C316, 416, 321 421, 330, 430 333, 433, 334 434, 335, 435 603, 311, 411	QET41CR-106	E. Capacitor	10 µF	16 V	15
C319, 419	QCS11HJ-820	C. Capacitor	82 pF	50 V	2
C320, 420, 342 442, 350, 450 351, 451, 352 452, 353, 453 378, 478	QET41HR-335	E. Capacitor	3.3 µF	″	14
C322, 422 347, 447	QCS11HJ-391	C. Capacitor	390 pF	″	2
C325, 425 363, 463	QFM41HJ-473	Mylar Capacitor	0.047 µF	″	4
C326, 426, 503	QET41CR-227	E. Capacitor	220 µF	16 V	3
C327, 427, 526	QET41AR-227	″	220 µF	10 V	3
C328, 428 343, 443	QEB41HM-104	E. Capacitor (Low Leak)	0.1 µF	50 V	4
C329, 429 360, 460	QEB41HM-334	E. Capacitor (Low Leak)	0.33 µF	50 V	4
C331, 431 338, 438	QFM41HJ-472	Mylar Capacitor	0.0047 µF	50 V	4
C332, 432	″ -273	″	0.027 µF	″	2
C336, 436	″ -562	″	0.0056 µF	″	2
C337, 437	QCS11HJ-251	C. Capacitor	250 pF	″	2
C340, 440 371, 471	QCY41HK-681	Mylar Capacitor	680 pF	″	4
C341, 441	QFM41HJ-102	″	0.001 µF	″	2
C345, 445	″ -123	″	0.012 µF	″	2
C346, 446 349, 449	QET41HR-105	E. Capacitor	1 µF	″	4
C355, 455, 322, 422 356, 456	QCS11HJ-331	C. Capacitor	330 pF	″	6
C357, 457	″ -200	″	20 pF	″	2
C358, 458	″ -301	″	300 pF	″	2
C362, 462, 602	QET41HR-475	E. Capacitor	4.7 µF	″	3
C364, 464	QFM41HJ-823	Mylar Capacitor	0.082 µF	″	2
C365, 465, 515	″ -332	″	0.0033 µF	″	3
C368, 468	QEB41HM-105	E. Capacitor	1 µF	″	2
C369, 469	QCY41HK-222	C. Capacitor	0.0022 µF	″	2
C370, 470	QET41AR–476	E. Capacitor	47 µF	10 V	2
C372, 472	QCS11HJ-560	″	56 pF	″	2
C373, 473, 601	QET41CR-336	″	33 µF	16 V	3
C375, 475	QFM41HK-823	Mylar Capacitor	0.082 µF	50 V	2
C376, 476, 508	QET41AR-108	E Capacitor	1000 µF	10 V	3
C377, 477, 516	QFM41HJ-223	Mylar Capacitor	0.022 µF	50 V	3
C505	QCS11HJ-361	C. Capacitor	360 pF	″	1
C509, 513	QET41CR-477	E. Capacitor	470 µF	16 V	2
C510	″ -108	″	1000 µF	″	1
C512	QCS11HJ-271	C. Capacitor	270 pF	50 V	1
C514	QFM41HJ-333	Mylar Capacitor	0.033 µF	50 V	1
C518	QFM42AK-822	″	0.0082 µF	100 V	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
C519	QCF11EZ-222	C. Capacitor	0.0022 µF 25 V	1
C520	QFM42AK-222	Mylar Capacitor	0.0022 µF 100 V	1
C521	〃 -392	〃	0.0039 µF 〃	1
C522	〃 -152	〃	0.0015 µF 〃	1
C523	〃 -682	〃	0.0068 µF 〃	1
C524	QCY41HK-332	C. Capacitor	0.0033 µF 〃	1
C525	QET41CR-228	E. Capacitor	2200 µF 16 V	1
C527, 517	QET41AR-477	〃	470 µF 10 V	2
R303, 403	QRD147J-225S	C. Resistor	2.2 MΩ 1/4 W	2
R305, 405, 313 413, 318, 418 343, 443	〃 -472S	〃	4.7 kΩ 〃	8
R306, 406 506, 514, 517	〃 -100S	〃	10 Ω 〃	5
R308, 408 520, 604	〃 -223S	〃	22 kΩ 〃	4
R309, 409 325, 425	〃 -334S	〃	330 kΩ 〃	4
R310, 410, 339 439, 340, 440	〃 -181S	〃	180 Ω 〃	6
R311, 411 370, 470	〃 -122S	〃	1.2 kΩ 〃	4
R312, 412	〃 -272S	〃	2.7 kΩ 〃	2
R316, 416 317, 417	〃 -682S	〃	6.8 kΩ 〃	4
R322, 422	QRD143J-333S	〃	33 kΩ 〃	2
R324, 424, 362 462, 505, 602	QRD147J-564S	〃	560 kΩ 〃	6
R326, 426	〃 -152S	〃	1.5 kΩ 〃	2
R332, 432	〃 -220S	〃	22 Ω 〃	2
R334, 434 335, 435	〃 -102S	〃	1 kΩ 〃	4
R336, 436	〃 -184S	〃	180 kΩ 〃	2
R337, 437	〃 -274S	〃	270 kΩ 〃	2
R338, 438 364, 464	〃 -332S	〃	3.3 kΩ 〃	4
R341, 441	〃 -473S	〃	47 kΩ 〃	2
R342, 442	〃 -104S	〃	100 kΩ 〃	2
R348, 448	〃 -394S	〃	390 kΩ 〃	2
R360, 460	〃 -681S	〃	680 Ω 〃	2
R501	QRD121J-106	〃	10 MΩ 1/2 W	1
R508, 509, 511, 512	QRH141J-100	Fusible Resistor	10 Ω 1/4 W	4
R517	QRD147J-680S	C. Resistor	68 Ω 〃	1
R518	QRD147J-121S	C. Resistor	120 Ω 〃	1
R606	〃 -151S	〃	150 Ω 〃	1
R521	〃 -4R7S	〃	4.7 Ω 〃	1
R523, 524	QRX019J-1R0	MF Resistor	1 Ω 1 W	2
R526	QRD141J-271S	C. Resistor	270 Ω 1/4 W	1
R603	QRD147J-563S	〃	56 kΩ 〃	1
R605	〃 -331S	〃	330 Ω 〃	1
R614	〃 -330S	〃	33 Ω 〃	1
	V44611-002	Formed Bus Wire		8
	〃 -003	〃		8
	〃 -005	〃		9
	〃 -006	〃		3
	V44691-001	Wire Clamp		12
CN501P	QMV5005-005	Connector		1
CN502P	QMV5004-004	〃		1
CN503P	〃 -003	〃		1
	VYH4574-001	Radiation Plate		1
	VYH4334-001	Earth Contact		1
	SPSP3012ZS	Screw		1
	A74138-2	Test Pin		6

Tuner P.W. Board Parts


R53
R54
R56
R55
T01
CN1P
TU
B
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CN2P
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X9
R40
C33
R22
R24
C55
C31
X4 E
B
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R23
C30
C27
C22
C29
L10
C26
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C5
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TC3-1
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C13
R6
CF1
C61
C93
C94
R87
R89
R93
E
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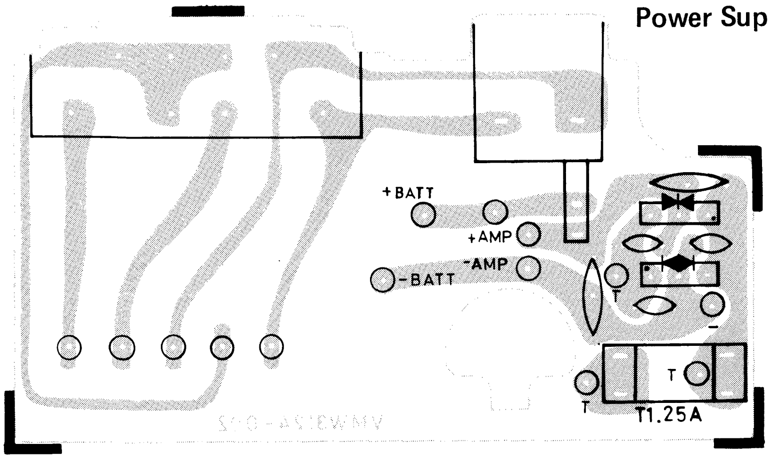
R92
R94
R90
R91
B
X11
E
R88
R82
VR1
C82
C85
C41
R27
R19
CFT1
R11
C53
C54
R16
X5
E C B
R17
C91
C92
R35
R83
C84
C44
C83
16
1
C81
C80
R28
D5
C42
D2
C63
C60
C25
R45
C68
R25
C43
R37
IFT3
R46
C51
X7 E
B
C86
C87
R81
E C B
X6
R31
C65
CF2
C89
C90
R41
R36
R47
C66
C35
R40
IC2
8
E C B
X8
R49
C67
C71
C56
R26
C69
R51
9
IC1
8
C52
VR2
R33
R48
R85
R86
LPF1
D3
C70
IFT2
R52
R47
D4
R32
C69

Pin	IC 1		IC 2
No.	FM	AM	FM/AM
1	1.8	1.2	6.5
2	1.8	1.2	2.1
3	5.2	1.8	2.9
4	1.8	2.0	2.5
5	0	0	2.3
6	1.3	1.3	5.1
7	2.0	2.0	0
8	2.0	2.0	0.5
9	2.2	2.4	1.5
10	2.2	2.4	1.3
11	5.4	5.8	1.3
12	3.5	0.5	0.1
13	0	0	1.3
14	2.0	2.0	1.3
15	0.3	0.2	1.3
16	0.9	0.9	0.4

Power Supply


+BATT
+AMP
-AMP
-BATT
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T
T1.25A
VMW3124-002

Motor

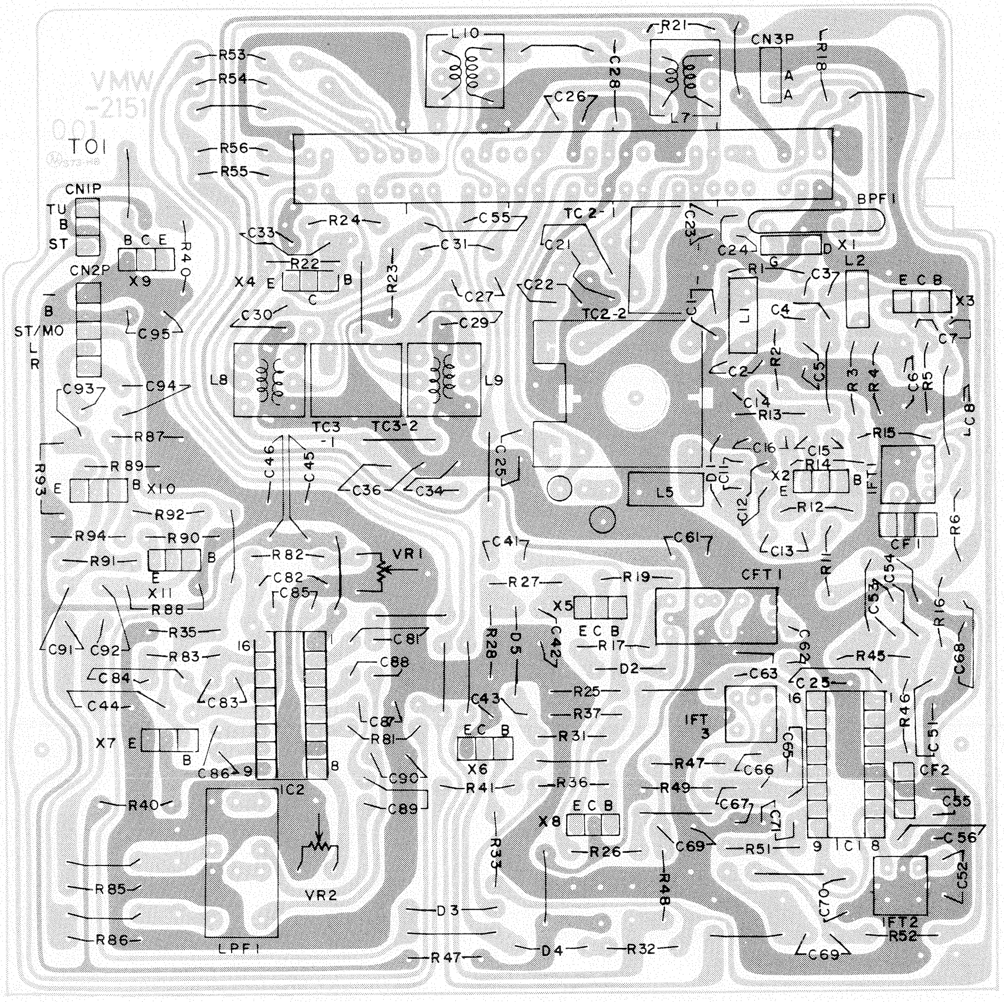
VMW3113
-001

Fig. 29

			E	C	B
X1	2SK212	FM RF AMP.	(K) 0	(A) 3.0	0
X2	2SC1342	FM LOC OSC	1.2	5.2	1.9
X3	2SC535	FM MIX	1.3	5.3	2.0
X4	2SC2839	AM LOC OSC	2.0	4.7	2.5
X6	2SC1684	Switching			
X7	2SC1684	Switching			
X8	2SC458	AM AGC Amp.			
X9	2SC1684	LED Drive			
X10	2SC458	LF Amp.	1.0	3.8	1.6
X11	2SC458	LF Amp.	1.0	3.8	1.6

		B	C	E			B	C	E			B	C	E
X6	AM	0.7	0.03	0	X8	FM No. Signal	0.01	5.7	0.2	X9	FM No. Signal	0.2	5.1	0
	FM	0.35	0.2	0		FM Signal	1.4	5.6	0.8		FM Signal	0.7	3.5	0
X7	FM No. Signal	0	1.5	0		AM No. Signal	0.01	6.2	0.2		AM No. Signal	0.1	5.2	0
	FM Signal	0	0.03	0		AM Signal	1.9	5.9	1.3		AM Signal	0.7	2.3	0
	AM	0	1.5	0										

Tuner P.W. Board Parts


VMW
-2151
TO1
CN1P
TU
B
ST
CN2P
B
ST/MO
L
R
X9
X4
X10
X11
X7
X6
X5
X8
X2
X3
X1
L10
L7
L8
L9
L1
L2
L5
CN3P
BPF1
TC2-1
TC2-2
TC3-1
TC3-2
VR1
VR2
IC2
LPF1
IC1
CFT1
IFT1
IFT2
IFT3
CF1
CF2
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R14
R15
R16
R45
R46
R49
R51
C26
C28
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D1
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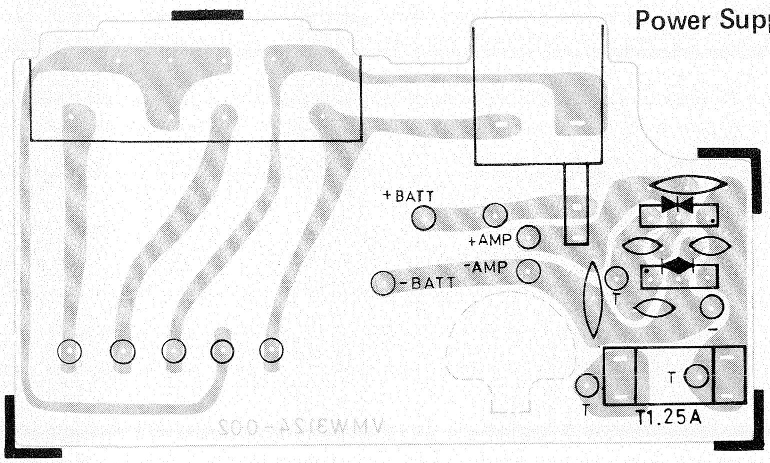
D4
D5


Power Supply
+BATT
+AMP
-AMP
-BATT
T
T1.25A
VMW3124-002

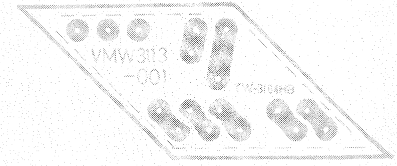

Motor
VMW3113
-001
TW-3104HB

Fig. 29

Pin No.	IC 1 FM	IC 1 AM	IC 2 FM/AM
1	1.8	1.2	6.5
2	1.8	1.2	2.1
3	5.2	1.8	2.9
4	1.8	2.0	2.5
5	0	0	2.3
6	1.3	1.3	5.1
7	2.0	2.0	0
8	2.0	2.0	0.5
9	2.2	2.4	1.5
10	2.2	2.4	1.3
11	5.4	5.8	1.3
12	3.5	0.5	0.1
13	0	0	1.3
14	2.0	2.0	1.3
15	0.3	0.2	1.3
16	0.9	0.9	0.4

			E	C	B
X1	2SK212	FM RF AMP.	(K) 0	(A) 3.0	0
X2	2SC1342	FM LOC OSC	1.2	5.2	1.9
X3	2SC535	FM MIX	1.3	5.3	2.0
X4	2SC2839	AM LOC OSC	2.0	4.7	2.5
X6	2SC1684	Switching			
X7	2SC1684	Switching			
X8	2SC458	AM AGC Amp.			
X9	2SC1684	LED Drive			
X10	2SC458	LF Amp.	1.0	3.8	1.6
X11	2SC458	LF Amp.	1.0	3.8	1.6

		B	C	E
X6	AM	0.7	0.03	0
	FM	0.35	0.2	0
X7	FM No. Signal	0	1.5	0
	FM Signal	0	0.03	0
	AM	0	1.5	0

		B	C	E
X8	FM No. Signal	0.01	5.7	0.2
	FM Signal	1.4	5.6	0.8
	AM No. Signal	0.01	6.2	0.2
	AM Signal	1.9	5.9	1.3

		B	C	E
X9	FM No. Signal	0.2	5.1	0
	FM Signal	0.7	3.5	0
	AM No. Signal	0.1	5.2	0
	AM Signal	0.7	2.3	0

Tuner P.W. Board Parts List

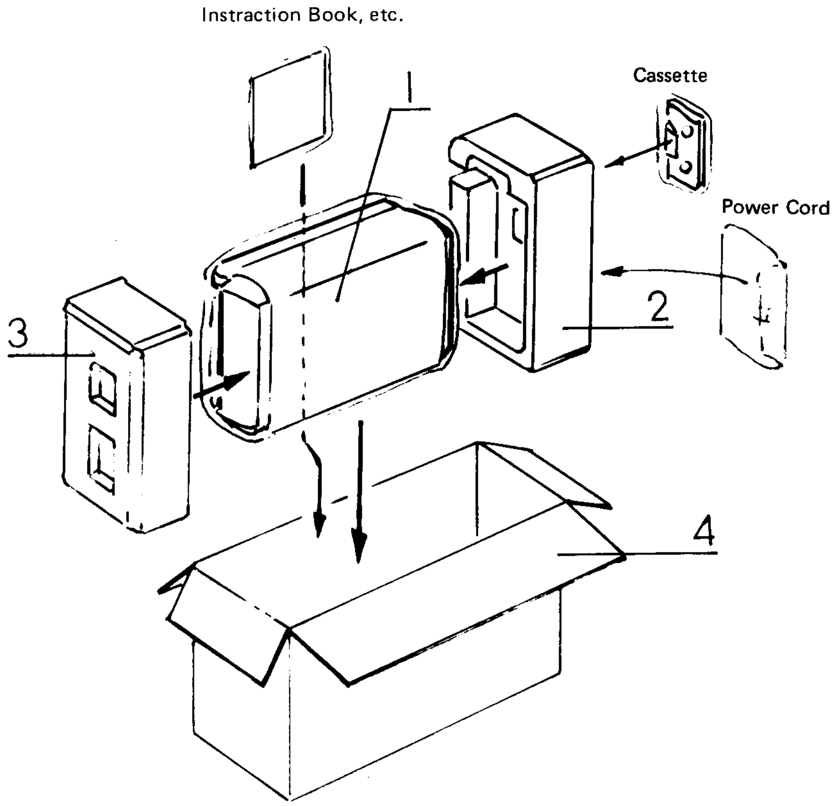
Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	VMW2151-001	P. W. Board	for Tuner	1
IC1	HA12413	IC		1
IC2	AN7410	″		1
X1	2SK212 (E)	Transistor		1
X2	2SC1342 (B)	″		1
X3	2SC535 (B)	″		1
X4, 5	2SC2839(D)	″		2
X6, 7, 9	2SC1684 (R, S)	″		3
X8, 10, 11	2SC458 (C)	″		3
D1	MA345	Si. Diode		1
D2, 4	HV80	″		2
D3, 5	1N34A	Ge Diode		2
	V44611-002	Formed Bus Wire	(10 mm)	23
	V44611-005	″	(12.5 mm)	2
	VKL3143-001	Board in Tab		13
BPF1	VBP3M5F-001	Band Pass Filter		1
LPF1	VQZ0011-001	Low Pass Filter		1
	VYH4694-001	Shield Case		1
CF1, 2	VCF2L3B-102	Ceramic Filter		2
L1, 5	VQF1B20-001	Coil	FM	2
L2	VQP0004-R68	Inductor	FM	1
L4, 6	VQB012B-302T	Bar Antenna		1
L7	VQR1014-301	Ant. Coil	SW	1
L8	VQL1T03-301	OSC Coil	LW	1
L9	VQM1T03-301	″	MW	1
L10	VQS1T03-205	″	SW	1
IFT1	VQT7F12-104	IFT	FM	1
IFT2	VQT7F07-501	″	″	1
IFT3	VQT7A11-301	″	AM	1
CFT1	V03067-026	CFT	AM	1
	VYH4369-003	Shield		1
VR1	QVP8A0B-014	V. Resistor		1
VR2	QVP8A0B-054	″		1
R1	QRD147J-220S	C. Resistor	22 Ω 1/4 W	1
R2, 6	″ -471	″	470 Ω ″	2
R3, 37	″ -682S	″	6.8 kΩ ″	2
R4, 23, 28	″ -392S	″	3.9 kΩ ″	3
R5, 13	″ -152S	″	1.5 kΩ ″	2
R11, 52	″ -104S	″	100 kΩ ″	2
R12, 22	″ -334S	″	330 kΩ ″	2
R14, 45	″ -331S	″	330 Ω ″	2
R15, 18, 42, 49, 57	″ -470S	″	47 Ω ″	5
R16	″ -181S	″	180 Ω ″	1
R17, 40, 87, 88	″ -273S	″	27 kΩ ″	4
R19, 27	″ -101S	″	100 Ω ″	2
R21	″ -221S	″	220 Ω ″	1
R24, 31	″ -182S	″	1.8 kΩ ″	2
R25, 51	″ -562S	″	5.6 kΩ ″	2
R26, 48	″ -332S	″	3.3 kΩ ″	2
R32	″ -472S	″	4.7 kΩ ″	1
R33, 91, 92	″ -333S	″	33 kΩ ″	4
R35	″ -823S	″	82 kΩ ″	1
R43	″ -473S	″	47 kΩ ″	1
R41, 54, 56 ,34	″ -153S	″	150 kΩ ″	4
R46, 53	″ -103S	″	10 kΩ ″	2
R47	″ -222S	″	2.2 kΩ ″	1
R55, 36	″ -393S	″	39 kΩ ″	2
R81	″ -100S	″	10 Ω ″	1
R82	″ -183S	″	18 kΩ ″	1
R85, 86	″ -123S	″	12 kΩ ″	2
R89, 90, 83	″ -102S	″	1 kΩ ″	3

Ref. No.	Parts No.	Parts Name	Remarks		Q'ty
R93, 94	QRD147J-272S	C. Resistor	2.7 kΩ	1/4 W	2
C1	QCT05CH-180	C. Capacitor	18 pF	″	1
C2, 16, 35, 62	QCF11EZ-103	″	0.01 μF	25 V	4
C3	QCT05CH-5R0	″	5 pF	50 V	1
C4	QCT05CH-7R0	″	7 pF	″	1
C5	QCT05CH-100	″	10 pF		1
C7, 8, 33, 45 56, 61, 67	QCF11EZ-223	″	0.022 μF	25 V	5
C11, 24	QCS11HJ-8R0	″	8 pF	50 V	2
C21	″ -150	″	15 pF	″	1
C12, 13, 14	QCT05CH-150	″	15 pF		3
C15	″ -120	″	12 pF		1
C20, 32	QCS11HJ-3R0	″	3 pF	50 V	2
C22	″ -390	″	39 pF	″	1
C23, 25	″ -100	″	10 pF	″	2
C26	″ -270	″	27 pF	″	1
C27, 6	″ -331	″	330 pF	″	2
C28	QFS21HJ-392	P. Capacitor	0.0039 μF	″	1
C30	QCS11HJ-390	C. Capacitor	39 pF	″	1
C31	QFS21HJ-181	P. Capacitor	180 pF	″	1
C29	QCT05WK-120	C. Capacitor	12 pF		1
C34, 46	QET41AR-107	E. Capacitor	100 μF	10 V	2
C36, 42, 43	QCF11EZ-473	C. Capacitor	0.047 μF	25 V	3
C41	QCY41HK-472	″	0.0047 μF	50 V	1
C51	QET41CR-106	E. Capacitor	10 μF	16 V	1
C52, 53, 54	QFM41HM-223	Mylar Capacitor	0.022 μF	50 V	3
C55	QET41AR-227	E. Capacitor	220 pF	10 V	1
C57	QCF11EM-223	S. E. Capacitor	0.022 μF	50 V	1
C63	QET41CR-226	E. Capacitor	22 μF	16 V	1
C64	QCF11EM-103	S. E. Capacitor	0.01 μF	50 V	1
C65	QFM41HM-103	Mylar Capacitor	0.01 μF	″	1
C66	QET41AR-476	E. Capacitor	47 μF	10 V	1
C68	QEB41HM-105	″	1 μF	50 V	1
C69, 93, 94, 44	QET41HR-475	″	4.7 μF	″	4
C70, 72, 73	QCS11HJ-151	C. Capacitor	150 pF	″	3
C71	QET41HR-105	E. Capacitor	1 μF	″	1
C81, 88, 89, 91, 92	QET41HR-335	″	3.3 μF	″	5
C82	QFS21HJ-471	P. Capacitor	470 pF	″	1
C83, 84, 86	QEC41HM-474	E. Capacitor	0.47 μF	″	3
C85	QFM41HM-473	Mylar Capacitor	0.047 μF	″	1
C87, 90	″ -333	″	0.033 μF	″	2
C95	QET41AR-477	E. Capacitor	470 μF	10 V	1
VC1-1, 2, 3, 4	QAP1224-512	V. Capacitor			1
TC1-1, 2, 3, 4 TC3-1, 2 TC2-1, 2	QAT2002-001	T. Capacitor			2
S1-1---10	QSSA401-002	Slide Switch			1
CN2-1---5	QMV5005-005	Connector	5 P		1
CN1-1---3 CN3-1---3	QMV5005-003	″	3 P		2

Power Supply P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	VMW3124-001	P. W. Board		1
D801, 802	DS131A	Si. Diode		1
D803, 804	DS132A	〃		1
C801, 802, 803	QCF11EZ-223	C. Capacitor	0.022 μF 25 V	3
C804, 805	QCC11EM-154	〃	0.15 μF 〃	2
	VKL3143-001	Board in Tab		2
J801	QMC0263-002BS	AC Socket	RC-656LB	1
	QMC0263-002	〃	RC-656L	1
S801-1, 2	QSS2325-101BS	Slide Switch	RC-656LB	1
	QSS2325-101	〃	RC-656L	
	QMF51A2-1R25BS	Fuse	RC-656LB	1
	QMF51A2-1R25	〃	RC-656L	
	A44594-001	Fuse Clip		2

Packing



Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	VPH4103-002	Door Protector		1
2	VPH1213-001	Side Cushion	Left	1
3	VPH1214-001	Side Cushion	Right	1
4	VPD5066-J01	Carton	RC-656LB	1
	VPD5066-J03	"	RC-656L	1
2 ~ 4	VDP5066-002A	Carton Ass'y	RC-656L	1
5	QPGA065-05004	Poly Bag	for set	1
6	VHPJ109-039	Paper Sheet		1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
VGT12S3-J04	Cassette Tape		1
QMP9017-009BS	Power Cord	RC-656LB	1
QMP3950-183	"	RC-656L	1
QZL1002-003BS	Warning Label	RC-656LB	1
QPGA012-02505	Poly Bag	for power cord	1
VNF0794-001	Feature Sticker		1
31465-18	Mark	RC-656LB	1
VYA4001-00A	Head Cleaning Stick		1
QPGB024-03404	Poly Bag	for Instruction Book	1
BT20013C	Guarantee Certificate	RC-656LB	1
VNM0799-301	Instruction Book		1
VNC6305-001	Troubleshooting		1

JVC

SERVICE MANUAL

MODEL RC-656LD

LW - MW - SW - FM
4-BAND STEREO RADIO CASSETTE RECORDER

Please note that the model RC-656LD is the same as RC-656L except relation parts to the enclosure assembly. As the other parts not listed here are the same as those of RC-656L, refer to the service manual (No. 1422) of the model RC-656L/LB.

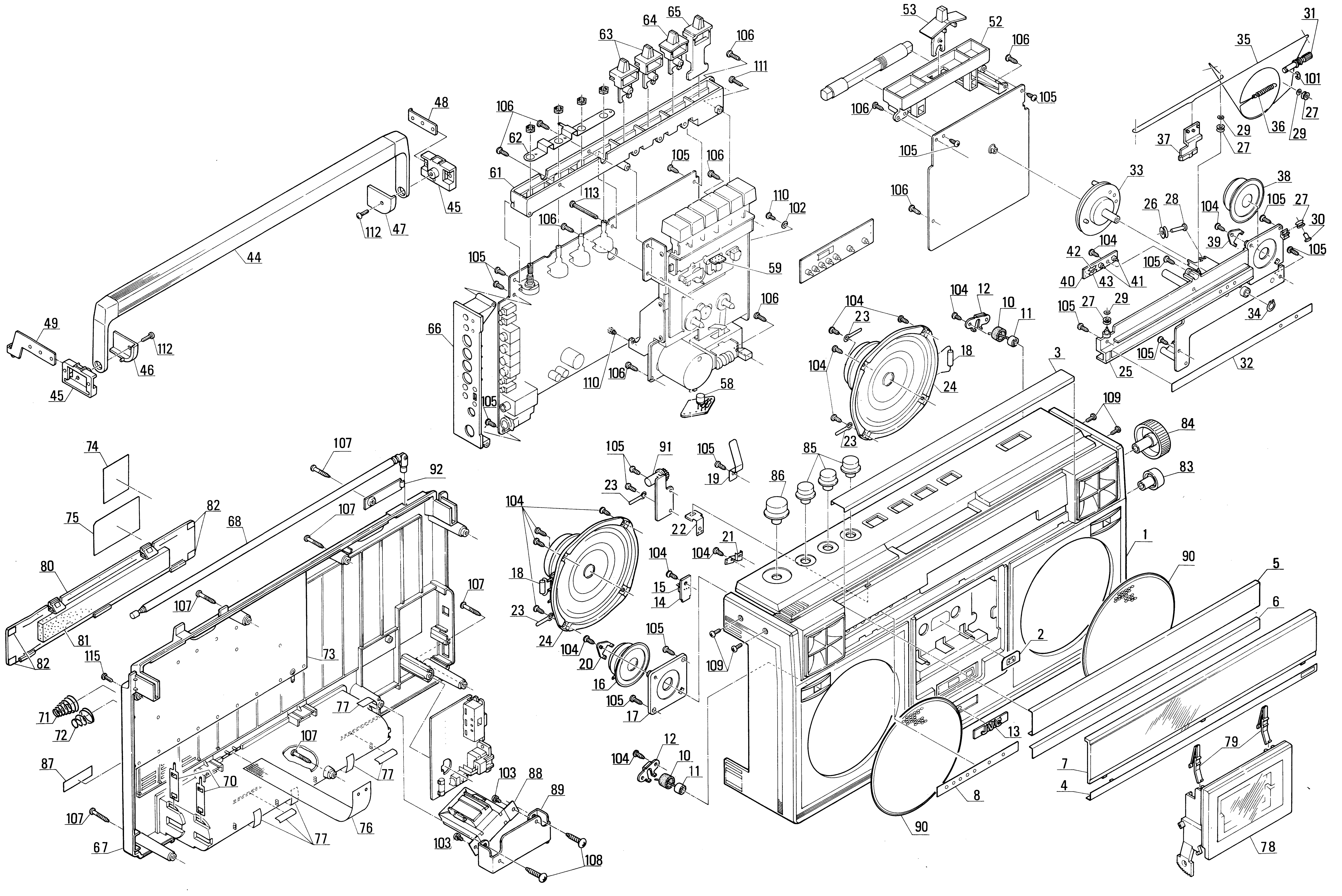
Assembly Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(1–8,13, 21,22)	ZCRC656LD-CBF	Front Cabinet Ass'y		1
1	VJC1225-002	Front Cabinet		1
2	VJD4005-002	Reflection Plate		1
3	VJD4412-002	Button Plate		1
4	VJD4413-001	Fitting		1
5	VJK3159-004	Dial Scale (A)		1
6	VJK3160-003	〃 (B)		1
7	VJK3161-001	Dial Lens		1
8	VJK4123-002	Scale Plate (A)		1
10	VYH4102-001	Mic. Bushing		2
11	VMME62N-026	E.C. Mic.		2
12	VYH4298-001	Holder		2
13	VJD4018-002	Mark		1
14	VMW1023-102D	P.W. Board	for Mic.	—
15	QMV5005-003	Connector	CN701-1 ~ 3	1
16	EAS5PH08SA	Speaker	SPKR302	1
17	VYH4565-002	Tweeter Holder		1
18	QEN21EM-335	N.E. Capacitor	C380, C480 3.3 μF, 25 V	2
19	VKY4165-002	Door Spring		1
20	VYH4352-002	Clamp	for Tweeter	1
21	V44981-001	Earth Catcher		1
22	VYH4389-001	〃		1
23	VKZ4001-007	Wire Holder		7
24	EAS16P127SH	Speaker	SPKR301, SPKR401	2
25	VYH2122-002	Chassis Base		1
26	VYH4032-001	Roller		1
27	VYH4002-001	〃		4
28	RTA4020	Rivet		1
29	V42562-1	Special Washer		3
30	RTA4010	Rivet		1
31	V41336-021	Tuning Shaft		1
32	VJK4124-002	Scale Plate (B)		1
33	VYH3177-003	Dial Drum		1
34	RCSA6000	C. Ring		1
35	VHR2TT9-05A	Dial Rope	1005 mm	1
36	E45679-001	Spring		1
37	VJN4049-00A	Needle Ass'y		1
38	EAS5PH08SA	Speaker	SPKR402	1
39	VYH4352-002	Clamp	for Tweeter	1
40	VMW1023-102C	P.W. Board	for Tuner LED	—

No. 1493
June 1982

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
41	SLP146B	L.E.D.	D201, D202	2
42	QRD147J-471S	C. Resistor	R201	1
43	" -101S	"	R202	1
44	VJH3005-00S	Handle Ass'y		1
45	VYH3120-001	Handle Supporter		2
46	V44943-001	Washer (L)		1
47	V44944-001	" (R)		1
48	VYH4224-001	Bracket		1
49	VYH4556-001	"		1
52	VYH2124-002	Tuner Chassis		1
53	VXQ3018-006	Toggle Lever	for Band	1
54	QAT5001-203	M.V. Capacitor		1
55	VYH4516-002	Fine Tuning Bracket		1
56	VYH4221-001	Arm		1
58	QET41CR-227	E. Capacitor	C702	1
59	VMW3035-302	P.W. Board	for R/P Head	1
61	VYH2125-002	Holder		1
62	VYH4567-001	Earth Plate		1
63	VXQ3028-004	Toggle Lever		2
64	VXQ3032-003	"		1
65	VXQ3033-002	"		1
66	VJD3232-001	Jack Board		1
67	VJC1226-002	Rear Cabinet		1
68	QZR4333-001	Rod Antenna		1
70	VYH4010-002	Battery Contact		2
71	53738-009	Spring		1
72	V44686-002	"		1
73	VYH4568-00B	Shield Ass'y		1
74	VND4027-005	Dolby Label		1
75	VYN5066-020C	Name Plate		1
76	V41583-3	Tape		1
77	VYSA1R4-050	Spacer		6
78	VJT4029-00A	Cassette Door Ass'y		1
79	V44910-002	Cassette Spring		2
80, 81	ZCRC656LD-BCA	Battery Cover Ass'y		1
80	VJC2016-006	Battery Cover		1
81	VYSH106-020	Spacer		1
82	VYSA1R6-009	"		4
83	VXKM520-20013	Knob		1
84	VXL4008-002	Tuning Knob		1
85	VXL4122-002	Knob		3
86	VXL4123-002	"		1
87	53866-2	Label		1
88	VTP54N2-12E	Power Transformer		1
89	VYH4570-003	Transformer Bracket		1
90	VJD3332-001	Punching Panel		1
91	VYH4936-001	Damp Holder		1
92	VJD4508-001	Antenna Cover		1
101	REE3000	E-Ring	Chassis Base	1
102	WBS3000N	Washer	P.W.B. – Mecha.	1
103	DPSP3006ZS	Ass'y Screw	Trans. Bracket	2
104	SBSF3008Z	Tapping Screw	E.C. Mic. Holder x 2, Mic. Wire Terminal x 1, Tweeter x 2, Earth Catcher x 1, Woofer x 8, L.E.D. P.W.B. x 1, Connect Bracket x 2, Holder (B) x 4	21
105	SBSF3010Z	"	Tweeter Holder – Front Cabinet x 2, Door Spring x 1 Chassis Ass'y – Front Cabinet x 5, Dump Ass'y x 2, Tuner Chassis – P.W.B. x 2, Fine Tuning Bracket x 1, Holder – P.W.B. x 2, Jack Board – P.W.B. x 2	17
106	SBSF3012C	Tapping Screw	Tuner CB – Front Cabinet x 3, Arm Ass'y – Front Cabinet x 5	8
107	SBSF3020R	"	Front Cabinet – Rear Cabinet	6
108	SBSF4020C	"	Trans. Bracket	2
109	SDSP3010RS	Screw	Front Cabinet – Rear Cabinet x 2, Bracket x 4	6
110	SPSP3006VS	Screw	P.W.B.– Mecha.	2
111	SPSP3012VS	"		1
112	SPSP3014ZS	"	Bracket	2
113	SPSP3035VS	"	P.W.B. – Mecha.	1
114	SSSP2610Z	Tapping Screw	for Arm	1
115	SDSP3010RS	Screw	Front Cabinet – Rear Cabinet	2

Assembly parts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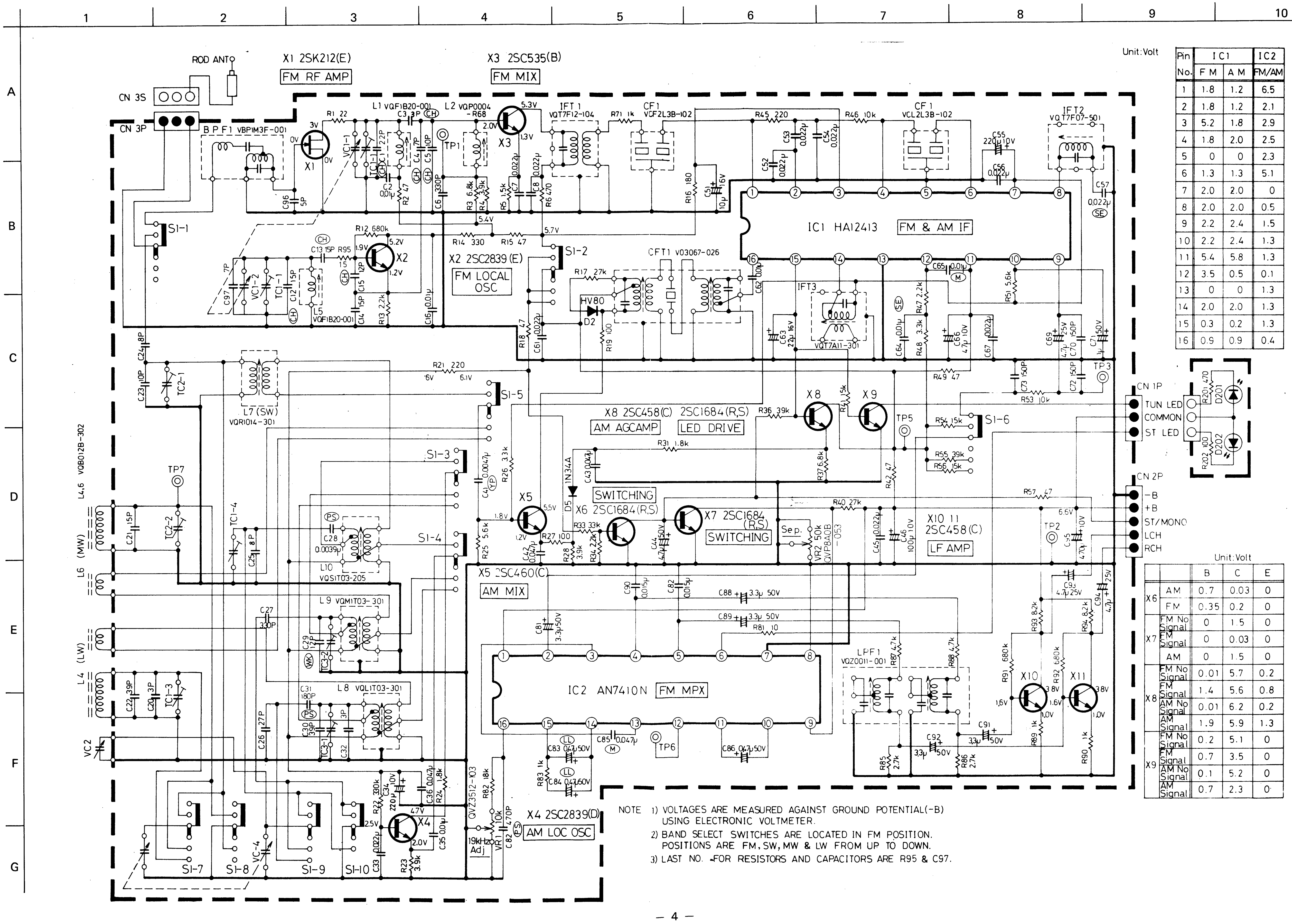
Schematic Diagram of RC-656LD (Tuner circuit)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A
B
C
D
E
F
G
ROD ANT
CN 3S
CN 3P
X1 2SK212(E)
FM RF AMP
X3 2SC535(B)
FM MIX
BPF1 VBP1M3F-001
L1 VQF1B20-001
L2 VQP0004-R68
IFT1 VQT7F12-104
CF1 VCF2L3B-102
CF1 VCL2L3B-102
IFT2 VQT7F07-501
TP1
S1-1
S1-2
S1-3
S1-4
S1-5
S1-6
S1-7
S1-8
S1-9
S1-10
X2 2SC2839(E)
FM LOCAL OSC
L5 VQF1B20-001
IC1 HA12413
FM & AM IF
CFT1 V03067-026
IFT3 VQT7A11-301
HV80
D2
L7 (SW) VQR1014-301
L4,6 VQB012B-302
TP7
L6 (MW)
L4 (LW)
VC2
L10 VQS1T03-205
L9 VQM1T03-301
L8 VQL1T03-301
X8 2SC458(C) 2SC1684(R,S)
AM AGCAMP
LED DRIVE
X9
TP5
1N34A
D5
X5
X6 2SC1684(R,S)
SWITCHING
X7 2SC1684(R,S)
SWITCHING
Sep.
VR2 50k QVP8A0B-053
X10, 11 2SC458(C)
LF AMP
TP2
TP3
X5 2SC460(C)
AM MIX
IC2 AN7410N
FM MPX
LPF1 VQZ0011-001
TP6
X10
X11
X4 2SC2839(D)
AM LOC OSC
QVZ3512-103
19kHz Adj
VR1
CN 1P
TUN LED
COMMON
ST LED
R201 470
D201
R202 100
D202
CN 2P
−B
+B
ST/MONO
LCH
RCH
Unit: Volt

Unit: Volt

Pin No.	IC1		IC2
	FM	AM	FM/AM
1	1.8	1.2	6.5
2	1.8	1.2	2.1
3	5.2	1.8	2.9
4	1.8	2.0	2.5
5	0	0	2.3
6	1.3	1.3	5.1
7	2.0	2.0	0
8	2.0	2.0	0.5
9	2.2	2.4	1.5
10	2.2	2.4	1.3
11	5.4	5.8	1.3
12	3.5	0.5	0.1
13	0	0	1.3
14	2.0	2.0	1.3
15	0.3	0.2	1.3
16	0.9	0.9	0.4

Unit: Volt

		B	C	E
X6	AM	0.7	0.03	0
	FM	0.35	0.2	0
X7	FM No Signal	0	1.5	0
	FM Signal	0	0.03	0
	AM	0	1.5	0
X8	FM No Signal	0.01	5.7	0.2
	FM Signal	1.4	5.6	0.8
	AM No Signal	0.01	6.2	0.2
	AM Signal	1.9	5.9	1.3
X9	FM No Signal	0.2	5.1	0
	FM Signal	0.7	3.5	0
	AM No Signal	0.1	5.2	0
	AM Signal	0.7	2.3	0

NOTE
1) VOLTAGES ARE MEASURED AGAINST GROUND POTENTIAL(−B) USING ELECTRONIC VOLTMETER.
2) BAND SELECT SWITCHES ARE LOCATED IN FM POSITION. POSITIONS ARE FM, SW, MW & LW FROM UP TO DOWN.
3) LAST NO. FOR RESISTORS AND CAPACITORS ARE R95 & C97.

Tuner P.W. Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
IC1	HA12413	I.C.		1
IC2	AN7410N	″		1
BPF1	VBP1M3F-001	B.P. Filter		1
X1	2SK212(E)	Transistor		1
X2	2SC1342(B)	″		1
X3	2SC535(B)	″		1
X4	2SC2839(D)	″		1
X5	2SC460(C)	″		1
X6, 7, 9	2SC1684(R,S)	″		3
X8, 10, 11	2SC458(C)	″		3
D2	HV80	Si. Diode		1
D5	1N34A	Ge. Diode		1
L1	VQF1B20-001	Coil		1
L2	VQP0004-R68	Inductor		1
L4, 6	VQB012B-302	Bar Antenna		1
L5	VQF1B20-001	Coil		1
L7	VQR1014-301	Ant. Coil	SW	1
L8	VQL1T03-301	Osc. Coil	LW	1
L9	″ -301	″	MW	1
L10	VQS1T03-205	″	SW	1
IFT1	VQT7F12-104	I.F.T.	IFT	1
IFT2	VQT7F07-501	″	FM	1
IFT3	VQT7A11-301	″	AM	1
CFT1	V03067-026	C.F.T.	AM	1
	VYH4369-003	Shield		1
	VYH4728-002	Shield Plate		1
BPF1	VBP1M3F-001	B.P. Filter		1
LPF1	VQZ0011-001	Low Pass Filter		1
CF1, 2	VCF2L3B-102	Ceramic Filter		2
VC1-1 ... 4, VC2-1 ... 4	QAP1224-512	V. Capacitor		1
TC3-1, 2, TC2-1, 2	QAT2002-001	T. Capacitor		2
S1-1 ... 10	QSSA401-002	Slide Switch		1
CN1-1 ... 3, CN3-1 ... 3	QMV5005-003	Connector		2
CN2-1 ... 5	″ -005	″		1
VC1-1 ... 4, VC2-1 ... 4	QAP1224-512	V. Capacitor		1
VR1	QVZ3512-103	V. Resistor		1
VR2	QVP8A0B-053	″		1
R1	QRD147J-220S	C. Resistor	22 Ω 1/4 W	1
R2	″ -470S	″	47 Ω ″	1
R3, 37	″ -682S	″	6.8 kΩ ″	2
R4, 23, 28	″ -392S	″	3.9 kΩ ″	3
R5, 13	″ -152S	″	1.5 kΩ ″	2
R6	″ -471S	″	470 Ω ″	1
R12	″ -824S	″	820 kΩ ″	1
R14	″ -331S	″	330 Ω ″	1
R15, 18, 42, 49, 57	″ -470S	″	47 Ω ″	5
R16	″ -181S	″	180 Ω ″	1
R17, 40	″ -273S	″	27 kΩ ″	2
R19, 27	″ -101S	″	100 Ω ″	2
R21, 45	″ -221S	″	220 Ω ″	2
R22	″ -334S	″	330 kΩ ″	1
R24, 31	″ -182S	″	1.8 kΩ ″	2
R25, 51	″ -562S	″	5.6 kΩ ″	2
R26, 48	″ -332S	″	3.3 kΩ ″	2
R33, 46, 53, 55	″ -103S	″	10 kΩ ″	4
R34	QRD143J-222S	″	2.2 kΩ ″	1
R36	QRD147J-393S	″	39 kΩ ″	1
R41	″ -153S	″	15 kΩ ″	1
R47	″ -222S	″	2.2 kΩ ″	1
R54	QRD143J-224S	″	220 kΩ ″	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
R71	QRD143J-102S	C. Resistor	1 kΩ 1/4 W	1
R81	QRD147J-100S	"	10 Ω "	1
R82	" -183S	"	18 kΩ "	1
R83	" -102S	"	1 kΩ "	1
R85, 86	" -272S	"	2.7 kΩ "	2
R87, 88	" -472S	"	4.7 kΩ "	2
R89, 90	" -271S	"	270 Ω "	2
R91, 92	" -684S	"	680 kΩ "	2
R93, 94	" -822S	"	8.2 kΩ "	2
R96	QRD143J-334S	"	330 kΩ "	1
C1, 12	QCT05CH-220	C. Capacitor	22 pF 50 V	2
C2, 16, 35, 62	QCF11EZ-103	"	0.01 μF 25 V	4
C3	QCT05CH-3R0	"	3 pF 50 V	1
C4, 13	" -7R0	"	7 pF "	2
C5	" -100	"	10 pF "	1
C6, 27	QCS11HJ-331	"	330 pF "	2
C7, 8, 33, 45, 56, 61, 67	QCF11EZ-223	"	0.022 μF 25 V	7
C14, 21	QCS11HJ-150	"	15 pF 50 V	2
C15	QCT05CH-120	"	12 pF "	1
C20, 32	QCS11HJ-3R0	"	3 pF "	2
C22, 30	" -390	"	39 pF "	2
C23	" -100	"	10 pF "	1
C24, 25	" -8R0	"	8 pF "	2
C26	" -270	"	27 pF "	1
C28	QFS21HJ-392	"	0.0039 μF "	1
C29	QCT05WK-120	"	12 pF	1
C31	QFS21HJ-181	P. Capacitor	180 pF 50 V	1
C34, 55	QET41AR-227	E. Capacitor	220 μF 10 V	2
C36, 42, 43	QCF11EZ-473	C. Capacitor	0.047 μF 25 V	3
C41	QCY41HK-472	"	0.0047 μF 50 V	1
C44, 69, 93, 94	QET41HR-475	E. Capacitor	4.7 μF "	4
C46	QET41AR-107	"	100 μF 10 V	1
C51	QET41CR-106	"	10 μF 16 V	1
C52, 53, 54	QFM41HM-223	"	0.022 μF 50 V	3
C57	QCC11EM-223	"	0.022 μF 25 V	1
C63	QET41CR-226	"	22 μF 16 V	1
C64, 65	QCC11EM-103	"	0.01 μF 25 V	2
C66	QET41AR-476	"	47 μF 10 V	1
C70, 72, 73	QCS11HJ-151	C. Capacitor	150 pF 50 V	3
C71	QET41HR-105	E. Capacitor	1 μF "	1
C81, 88, 89, 91, 92	" -335	"	3.3 μF "	5
C82	QFS21HJ-471	P. Capacitor	470 pF "	1
C83, 84, 86	QEC41HM-474	E. Capacitor	0.47 μF "	3
C85	QFM41HM-473	M. Capacitor	0.047 μF "	1
C87, 90	" -153	"	0.015 μF "	2
C95	QCS11HJ-5R0	C. Capacitor	5 pF "	1

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